

## A more efficient method to generate integration-free human iPS cells

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**We report a simple method to generate human induced pluripotent stem cells (iPSCs) with episomal plasmid vectors. We generated human iPSCs from multiple donors, including two putative human leukocyte antigen (HLA)-homozygous donors who match ~20% of the Japanese population at major HLA loci; most iPSCs integrated transgene-free and effectively differentiated *in vivo* and *in vitro*. This method may provide iPSCs suitable for autologous and allogeneic stem-cell therapy in the future.**

Genomic integration of transgenes increases the risk of tumor formation and mortality in chimeric and progeny mice derived from induced pluripotent stem cells (iPSCs)<sup>1</sup>. Integration-free human iPSCs have been generated using several methods, including adenovirus<sup>2</sup>, Sendai virus<sup>3</sup>, the piggyBac system<sup>4</sup>, minicircle vector<sup>5</sup>, episomal vectors<sup>6</sup>, direct protein delivery<sup>7</sup> and synthesized mRNA<sup>8</sup> (**Supplementary Table 1**). However, reprogramming efficiency using integration-free methods is impractically low in most cases. Direct delivery of proteins or RNA is labor-intensive, requiring repeated delivery of the reprogramming factors. Modifying Sendai virus vectors or preparing synthesized RNA are technically demanding.

In the original report describing episomal plasmid vectors for reprogramming, the authors used seven factors, including *POU5F1* (also known as *OCT3/4*), *SOX2*, *KLF4*, *MYC* (also known as *c-MYC*), *NANOG*, *LIN28A* (also known as *LIN28*) and SV40 large T antigen (*SV40LT*), in three different vector combinations<sup>6</sup> (T1~T3 combination, **Fig. 1a** and **Supplementary Table 2**). In this study, we used two findings from our laboratory to enhance efficiency of reprogramming by episomal plasmids: iPSC generation is markedly enhanced by p53 suppression<sup>9</sup>, and L-MYC is more potent and specific than c-MYC during human iPSC generation<sup>10</sup>.

We prepared four vector combinations (**Fig. 1a** and **Supplementary Table 2**). The Y1 combination had six factors (*OCT3/4*, *SOX2*, *KLF4*, *c-MYC*, *LIN28* and *NANOG*) in three episomal plasmids. The Y2 combination contained an additional *TP53* (also known as *p53*) shRNA in one of the three plasmids. We replaced *c-MYC* and *NANOG* with *MYCL1* (also known as *L-MYC*) in the Y1 and Y2 combinations, respectively, to yield the Y3 and Y4 combinations (**Fig. 1b**).

We electroporated these seven combinations of episomal vectors (Y1–Y4 or T1–T3) into three human dermal fibroblast (HDF) lines and two dental pulp cell lines on day 0 (**Fig. 1c**). We trypsinized transfected cells on day 7 and reseeded them onto feeder layers. We maintained the cells in embryonic stem cell (ESC) medium, and small cell colonies became visible ~2 weeks after transfection. We

counted the number of colonies with a flat human ESC-like morphology and non-ESC-like colonies around day 30 (**Supplementary Fig. 1**). The Y4 combination resulted in significantly more iPSC colonies than did any of T1–T3 combinations (**Fig. 1d**). In addition to these five parental cell lines, we obtained iPSC colonies from seven additional HDF lines with the Y4 combination of factors (**Supplementary Table 3**).

We expanded ESC-like colonies derived with the Y4 combination for additional experiments. The majority of the colonies were expandable and exhibited a cellular morphology similar to that of human ESCs, characterized by large nuclei and scant cytoplasm (**Fig. 2a,b**). We termed these episomal plasmid vector-derived iPSCs ‘pla-iPSCs’. Ten of eleven clones we analyzed were karyotypically normal (**Supplementary Fig. 2** and **Supplementary Table 4**). Short tandem repeat analyses confirmed that pla-iPSC clones were derived from HDFs and dental pulp cells (**Supplementary Table 5**). Reverse transcription–PCR (RT-PCR) analyses revealed that pla-iPSC clones expressed pluripotent stem cell markers, such as *OCT3/4*, *SOX2*, *NANOG* and *DPPA5*, at levels comparable to those in ESCs and retrovirus-derived iPSC clones (**Fig. 2c** and **Supplementary Figs. 3a, 4** and **5**). Global gene expression profiles also showed that pla-iPSC clones were similar to ESC and retro-iPSC clones (**Supplementary Fig. 6** and **Supplementary Table 6**). The DNA methylation levels of CpG sites in the promoter region of *NANOG* were high in parental HDFs and dental pulp cells but were low in pla-iPSCs and ESCs (**Fig. 2d**).

To examine whether episomal vectors persisted in pla-iPSCs, first we transfected an episomal vector encoding EGFP into fibroblasts and monitored fluorescence. Sixty-eight percent of the cells were fluorescent 1 week after transfection (**Supplementary Fig. 7**). However, the signal quickly decreased thereafter, and only 2.4% of cells were fluorescent 4 weeks after electroporation. Then we estimated the copy numbers of the episomal vectors in established pla-iPSC clones. We designed a PCR primer pair for *EBNA-1* to calculate the copy numbers of the episomal vectors and another primer pair for the endogenous *FBXO15* locus to estimate the cell number. We detected ~200 copies of the episomal vectors per cell 6 d after transfection (**Fig. 2e** and **Supplementary Fig. 3b**). In contrast, we detected no *EBNA-1* DNA in five of seven clones tested at passages 11–20 (~ 80–120 d after transfection). The remaining two clones contained ~0.001 and 2 copies, respectively. The later clone likely had integrated the plasmid into a chromosome. These data demonstrated that the episomal vectors were spontaneously lost in the majority of pla-iPSC clones.

We examined the differentiation potential of pla-iPSCs *in vivo*. Injection of pla-iPSCs into the testes of immunodeficient mice yielded tumors within 3 months. Histological examination confirmed

that these tumors were teratomas and contained tissues of all three germ layers, including neural epithelium, cartilage and gut-like epithelium (**Supplementary Fig. 8**).

We carried out directed differentiation of the pla-iPSCs into dopaminergic neurons *in vitro* (Online Methods). RT-PCR detected upregulation of *SOX1*, a marker of immature neural cells, and downregulation of *OCT3/4* 12 d after induction (**Supplementary Fig. 9a**). Immunostaining showed that the majority of cells expressed Nestin after 29 d, with some cells still proliferating and expressed Ki67 (**Supplementary Fig. 9b–e**). Clusters of Nestin-expressing cells expressed PAX6, and more mature cell clusters expressed tyrosine hydroxylase, a marker of dopaminergic neurons (**Supplementary Fig. 9f,g**). Tyrosine hydroxylase-expressing cells localized with the neural markers Tuj1 and MAP2ab, and the vesicular monoamine transporter VMAT2 (**Fig. 2f–h** and **Supplementary Fig. 9h–l**). Therefore, pla-iPSCs have the potential to differentiate into dopaminergic neurons.

We also examined whether pla-iPSC clones differentiated into retinal pigment epithelial cells using a modified stromal cell-derived inducing activity method (Online Methods). Five of six pla-iPSC clones developed pigmented cell clusters after 30 d in conditioning medium of mouse PA6 stromal cells. The clusters grew and exhibited a squamous and hexagonal morphology, characteristic of retinal pigment epithelial cells (**Fig. 2i,j**).

We examined the human leukocyte antigen (HLA) types of our dental pulp-derived iPSC lines. In a previous study only one HLA type had been detected in two dental pulp lines by a PCR–reverse sequence–specific oligonucleotide probe (rSSOP) protocol<sup>11</sup>: line DP74 had been typed as *HLA-A\*24, –; HLA-B\*52, –; HLA-DRB1\*15, –* and line DP94 as *HLA-A\*11, –; HLA-B\*15, –; HLA-DRB1\*04, –* (‘–’ means no other allele was detected; **Supplementary Table 7**). We also typed these lines with two additional analyses. A PCR-rSSOP protocol optimized for the Japanese population typed line DP74 and its progeny iPSC lines (454E-2 and 457C-1) as *HLA-A\*24:02, –; HLA-B\*52:01, –; HLA-DRB1\*15:02, –*, and typed DP94 and its progeny iPSC line (453F-2) as *HLA-A\*11:01, –; HLA-B\*15:01, –; HLA-DRB1\*04:06, –*. Sequence-based typing showed that the types of DP74 and DP94 were *HLA-A\*24:02:01, –; HLA-B\*52:01:01, –; HLA-DRB1\*15:02:01, –* and *HLA-A\*11:01:01, –; HLA-B\*15:01:01, –; HLA-DRB1\*04:06:01, –*, respectively. The families of the donors of the two dental pulp lines could not be typed because the lines were established in an anonymous way. Therefore, it is not possible to formally conclude that these donors are homozygous for the HLA haplotypes. Nevertheless, the fact that three independent analyses detected only one type in each donor is indicative of homozygosity.

According to the HLA Laboratory database, frequencies of *HLA-A\*24:02*; *HLA-B\*52:01*; *HLA-DRB1\*15:02* and *HLA-A\*11:01*; *HLA-B\*15:01*; *HLA-DRB1\*04:06* haplotypes in the Japanese population are 8.5% and 1.3%, respectively, ([http://www.hla.or.jp/hapro\\_e/top.html](http://www.hla.or.jp/hapro_e/top.html); **Supplementary Table 8**). Theoretically, iPSCs established from these two individuals match ~20% of all the combinations of 2,117 haplotypes in Japanese population. Indeed, pla-iPSC lines derived from lines DP74 and DP94 match 32 of 107 donors<sup>11</sup> at the three *HLA* loci (*HLA-A*, *HLA-B* and *HLA-DR*) with the two-digit specification (**Supplementary Table 7**).

Others previously estimated that iPSC lines with 50 unique HLA homozygous haplotypes would match ~90% of the Japanese population at the *HLA-A*, *HLA-B* and *HLA-DRB1* loci with two-digit specification<sup>12</sup>. We performed a similar estimation with four-digit specification using the HLA Laboratory database and found that 50 unique HLA-homozygous donors would cover ~73% of the Japanese population (**Fig. 3a** and **Supplementary Table 8**). Approximately 75 and 140 unique donors would be needed to cover ~80% and 90%, respectively. It would be necessary to type ~37,000, ~64,000 and ~160,000 individuals, respectively, to identify these 50, 75 and 140 donors (**Fig. 3b**).

Allografts using *HLA*-homozygous iPSCs may provide a therapeutic alternative to autologous grafts, for cases in which transplant is likely to be needed soon after injury; furthermore, they allow for the advance selection of safe clones<sup>13</sup>. The beneficial effects of matching at major *HLA* loci are well documented in renal transplantation<sup>14,15</sup>, although recipients of allografts derived from *HLA*-homozygous iPSCs would still need immunosuppressants after transplantation because of other HLA antigens, non-HLA antigens and immunity by natural killer cells.

We report a simple, non-integrative method for reprogramming human cells. The increased efficiency and the use of nontransforming Myc should be useful to generate iPSCs from many donors, such as individuals with disease. The approach may also prove beneficial for generating human iPSCs for use in autologous and allogeneic stem cell therapy.

#### **Accession codes.**

Addgene: 27076 (pCXLE-hOCT3/4), 27077 (pCXLE-hOCT3/4-shp53-F), 27078 (pCXLE-hSK), 27079 (pCXLE-hMLN), 27080 (pCXLE-hUL), 27081 (pCXLE-Fbx15-cont2) and 27082 (pCXLE-EGFP).

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### **AUTHOR CONTRIBUTIONS**

K.O. and S.Y. conceived the project and wrote the manuscript. K.O. constructed the vectors with H.H., M. N., and K. Tanabe and conducted most of the experiments with Y.M., Y. S. and A.O. A.M. and J. T. carried out differentiation experiment into dopaminergic neurons. S. O. and M. T. performed differentiation into retinal pigment epithelial cells. K. Tezuka., T. S., and T. K. established dental pulp cell lines. H. S. performed HLA haplotyping in Japanese population and supervised HLA analysis.

### **COMPETING FINANCIAL INTERESTS**

K.O., M.N. and S.Y. are filing a patent application to Japan, US and EU based on the results reported in this paper (PCT/JP2010/063733). S.Y. is a member of Scientific Advisory Board for iPS Academia Japan Inc. and iPierian Inc., which manage the patents.

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## FIGURE LEGENDS

### Figure 1

Establishment of human iPSCs putatively homozygous for the *HLA-A*, *HLA-B* and *HLA-DRB1* loci. **(a)** Combinations of reprogramming factors and episomal vectors used in this study. **(b)** Episomal expression vectors in the Y4 combination. *CAG*, CAG promoter; *WPRE*, woodchuck hepatitis post-transcriptional regulatory element; and *pA*, polyadenylation signal. **(c)** Schematic of the pla-iPSC induction protocol. HDFs or dental pulp cells were cultured in Dulbecco's modified Eagle medium (DMEM) with 10% (vol/vol) fetal bovine serum (FBS) or mesenchymal stem cell growth medium (MSCGM), respectively. The episomal vector mixture was electroporated into cells on day 0; transfected cells were collected and reseeded on feeders on day 7, culture medium was changed to ESC medium containing bFGF on day 8, and iPSC colonies were counted and picked around day 26–32. **(d)** Numbers of colonies per  $1.0 \times 10^5$  cells obtained with different combinations of reprogramming factors. For negative control, we transduced episomal vector encoding EGFP (control). MEF, mouse embryonic fibroblasts; SNL, mouse embryonic fibroblast cell line. Data are means  $\pm$  s.d. of numbers of ESC-like colonies obtained from 15 independent induction experiments using five cell lines. \*\*\*\* $P < 0.05$  against T1, T2, T3 and control; \*\*\* $P < 0.05$  against T1, T3 and control; \*\* $P < 0.05$  against T1 and control; \* $P < 0.05$  against control.

## Figure 2

Characterization of pla-iPSC clones. **(a,b)** Phase contrast images of an established pla-iPSC line. Scale bars, 1 mm **(a)** and 100  $\mu\text{m}$  **(b)**. **(c)** RT-PCR analyses for pluripotent cell markers. Total RNA was isolated from pla-iPSC clones established with the Y1 (clone 454B-1), Y2 (454C-2), Y3 (454D-1) or Y4 (454E-2, 451F-3, 457C-1 and 453F-2) combinations, from retrovirus-derived iPSC clones (retro-iPSC) and from ESC lines. In the lanes labeled *OCT3/4* and *SOX2*, PCR primers only detected endogenous gene expression; in the Ret-*OCT* lane, PCR primers specifically amplified the retroviral *OCT3/4* transgene. *GAPDH* was used as a loading control. As a negative control, *GAPDH* amplification was also performed without RT reaction (RT (-)). Fibroblasts 4 d after electroporation of the Y4 mixture (HDF-elepo) were used as another negative control. **(d)** DNA methylation status of the *NANOG* promoter region in the indicated cell lines. Open and closed circles indicate unmethylated and methylated CpG dinucleotides, respectively. **(e)** Copy numbers of episomal vectors in pla-iPSC clones. Numbers in parentheses indicate passage number. Also shown are the estimated numbers of cells analyzed for each clone. Fibroblasts 6 d after electroporation of the Y4 combination were analyzed (fibro-d6) as a positive control. **(f-h)** Differentiation of pla-iPSC clone (454E-2) into dopaminergic neurons. Micrographs are immunostained for Tuj1 **(f)** and tyrosine hydroxylase (TH) **(g)**. A merged image with nuclear staining using DAPI **(h)** is shown. Scale bars, 20  $\mu\text{m}$ . **(i,j)** Differentiation of pla-iPS clone (454E-2) into retinal pigment epithelial cells. Scale bars, 100  $\mu\text{m}$  **(i)** and 50  $\mu\text{m}$  **(j)**.

## Figure 3

Estimated coverage of the Japanese population by HLA homozygous donors. **(a)** Estimated cumulative coverage of the Japanese population by theoretical unique *HLA* homozygous donors at *HLA-A*, *HLA-B* and *HLA-DRB1* loci with four-digit specification. **(b)** Estimated numbers of donors required to identify individuals with unique HLA homozygous haplotypes.

## Online Methods

### Cell culture.

Human fibroblasts HDF1419, HDF1388, HDF1429, HDF1377, HDF1437 and HDF1554 were purchased from Cell Applications, Inc., and TIG121, TIG120, TIG114 and TIG107 were obtained from the Japanese Collection of Research Bioresources. Human fibroblasts were cultured in DMEM



(Nacalai Tesque) supplemented with 10% FCS (Invitrogen). Human dental pulp (DP) cells were established from human third molars as described previously<sup>11</sup> and were maintained in mesenchymal stem cell growth medium (MSCGM; Lonza). Human ESC lines (KhES-1 and KhES-3) were obtained from Kyoto University. H1 and H9 were from WiCell Research Institute. Mouse embryonic fibroblasts (MEFs) were isolated from embryonic day 13.5 embryos of C57BL/6 mice. All mice used in this study were bred and killed appropriately following code of ethics of animal research committee in Kyoto University. MEF and SNL cells<sup>16</sup> were cultured in DMEM supplemented with 7% (vol/vol) FCS, 2 mM L-glutamine and 50 units and 50 mg ml<sup>-1</sup> penicillin and streptomycin, respectively. Established iPSCs and ESCs were maintained on mitomycin C-treated SNL cells in primate ESC medium (ReproCELL) containing 4 ng ml<sup>-1</sup> of bFGF (Wako) as described previously<sup>17</sup>.

### **Vector construction.**

Efficient transgene expression was achieved by inserting the woodchuck hepatitis post-transcriptional regulatory element (*WPRE*) upstream of the polyadenylation signal of pCX-EGFP<sup>18</sup>. The episomal cassette was transferred from pCEP4 (Invitrogen). The *EBNA-1* sequence (EcoRI and MfeI sites) was flanked by two *loxP* sequences, and the *loxP-EBNA-1-loxP-OriP* cassette was then digested with BamHI and BglII and inserted into the BamHI site of pCX-EGFP containing the *WPRE*. This episomal vector was designated pCXLE-EGFP.

Human cDNAs encoding *OCT3/4*, *SOX2*, *KLF4*, *c-MYC*, *L-MYC*, *NANOG* and *LIN28* were amplified by PCR and cloned into pCR2.1 (Invitrogen). The translation termination codons of *SOX2*, *c-MYC*, *L-MYC* or *LIN28* were replaced with a BamHI site and then were also cloned into pCR2.1. The cDNAs without a translation termination codon were thereafter ligated with 2A self-cleavage sequences in pBS-2A<sup>19</sup> with appropriate restriction enzymes to generate pBS-cDNA-2A. *c-MYC-2A* was digested with NotI and BspHI and was ligated into the NotI and NcoI sites of pBS-LIN28-2A in the same reading frame to generate the *c-MYC-LIN28-NANOG* cassette. These *cDNA-2A* or *c-MYC-2A-LIN28-2A* constructs were then ligated to another cDNA or *NANOG* in pCR2.1 with the translation termination codon in the same reading frame using appropriate restriction enzymes. These cDNA-2A-cDNA-stop or *c-MYC-2A-LIN28-2A-NANOG-stop* constructs were then inserted into the EcoRI site of pCXLE-EGFP. pCXLE-hOCT3/4-shp53 was constructed by inserting an shRNA expression cassette for *p53*, driven by the mouse *U6* promoter, into the BamHI site of pCXLE-hOCT3/4. The pCXLE-Fbx15-cont2 was generated by inserting the *FBXO15* cDNA into pCXLE-EGFP. Episomal vectors described previously<sup>6</sup> were obtained from Addgene (20922–20927).

### **Generation of iPSCs with episomal vectors.**

HDF and DP cells were cultured in DMEM supplemented with 10% FBS and mesenchymal stem cell growth medium (MSCGM), respectively. Three micrograms of expression plasmid mixtures were electroporated into  $6 \times 10^5$  HDF or DP cells with Microporator (Invitrogen) with a 100- $\mu$ l kit according to the manufacturer's instructions. The plasmid mixtures used in the experiments are shown in **Supplementary Table 2**. Conditions used were 1,650 V, 10 ms, 3 time pulses for HDF, and 1,800 V, 20 ms, 1 time pulse for DP cells. The cells were trypsinized 7 d after transduction, and  $1 \times 10^5$  cells were re-plated onto 100-mm dishes covered with an SNL or MEF feeder layer. The culture medium was replaced the next day with Primate ESC medium (ReproCELL) containing bFGF. The colonies were counted 26–32 d after plating, and those colonies similar to human ESCs were selected for further cultivation and evaluation. The pla-iPSC clones used in this study are summarized in **Supplementary Table 9**.

### **Characterization of pla-iPSC clones.**

Isolation of total RNA, RT-PCR of marker gene expression, DNA microarray, bisulfite genomic sequencing and teratoma formation were performed as previously described<sup>17</sup>. The primer sequences used in this study are shown in **Supplementary Table 10**. The chromosomal G-band analyses were performed at the Nihon Gene Research Laboratories. Short tandem repeat analyses were performed at Bex Co.; briefly, genomic DNAs were amplified by the PowerPlex 16 system (Promega) and were then analyzed with an ABI PRISM 3100 genetic analyzer and the GeneMapper v3.5 software program (Applied Biosystems). Differentiation of pla-iPSC clones into dopaminergic neurons was performed using the serum-free culture of embryoid body-like aggregates (SFEB) method combined with double SMAD inhibition by a BMP antagonist and an Activin/Nodal inhibitor as described elsewhere<sup>20</sup>. *In vitro* directed differentiation into retinal pigment epithelial cells was performed with the modified stromal cell-derived inducing activity method<sup>21,22</sup>. Briefly, pla-iPSCs were collected with trypsin and collagenase IV, and were treated with inhibitors for WNT and Nodal signaling under serum-free conditions. The cells were then maintained in PA6-conditioning medium for maturation.

### **Episomal copy-number detection.**

Cells cultured in 60-mm dishes were collected with a cell scraper after removing feeder cells with treatment of CTK dissociation solution. The cells were then placed into tubes and centrifuged, and the cell pellets were lysed with 200  $\mu$ l of lysis solution, containing 1 $\times$  Ex Taq buffer (Takara) and 167  $\mu$ g  $\text{ml}^{-1}$  proteinase K. The lysates were incubated at 55  $^{\circ}\text{C}$  for 3 h, and proteinase K was inactivated at 95  $^{\circ}\text{C}$ . The lysates were used for quantitative PCR analysis. The pCXLE-hFbx15-cont2 plasmid was used to generate a standard curve to determine the correlation between copy number and threshold cycle (Ct) values for *FBXO15* or *EBNA-1*. Then the copy number of *FBXO15* and *EBNA-1* in each iPSC sample was estimated from the observed Ct values. The cell number in each reaction was estimated by dividing the estimated copy number of *FBXO15* by two since each cell had two *FBXO15* alleles. One reaction included up to  $1.2 \times 10^4$  cells. The total copy number of *EBNA-1* was measured in  $\sim 5 \times 10^4$  cells by repeating six or seven reactions.

#### **HLA typing and estimation of coverage.**

HLA typing of 107 DP cell lines was performed with the PCR-reverse sequence specific oligonucleotide probe (rSSOP) method using LABType SSO (One lambda) at Repro Cell<sup>23</sup>. Additional HLA typing was performed with PCR-rSSOP using WAKFlow (Wakunaga Pharmaceutical Co.) at HLA Laboratory. We performed pedigree study of 4,743 Japanese families (17,325 members) and identified 2,117 haplotypes, including interlocus recombinant haplotypes, which were detected in family studies. The haplotype frequency was calculated by direct counting on the parents in the families. Sequence-based typing was performed with AlleleSEQR (Atria Genetics) at Mitsubishi Chemical Medience Corporation.

To estimate coverage of Japanese population by HLA homozygous donors, we first calculated the frequencies of all possible combinations of the 2,117 HLA haplotypes shown in **Supplementary Table 8**. Haplotype combinations that can be covered by a given homozygous donor were then identified and their frequencies were added to estimate coverage by the homozygous donor. When one *HLA-A*, *HLA-B*, *HLA-DRB1* heterozygous individual was covered by multiple homozygous donors, we counted only once to avoid overestimation.

The expected number (EN) of each homozygous haplotype at a given population size (PS) was first calculated as;  $\text{EN} = (\text{haplotype frequency})^2 \times \text{PS}$ . EN (if  $\text{EN} < 1$ ) or 1 was then summed for each homozygous haplotype to estimate the expected numbers of unique HLA haplotype donors at the given PS.

### Statistical analyses.

Data are shown as the mean  $\pm$  s.d. Statistical significance among multiple groups was evaluated with the Steel-Dwass test.

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Figure 1, Okita et al.

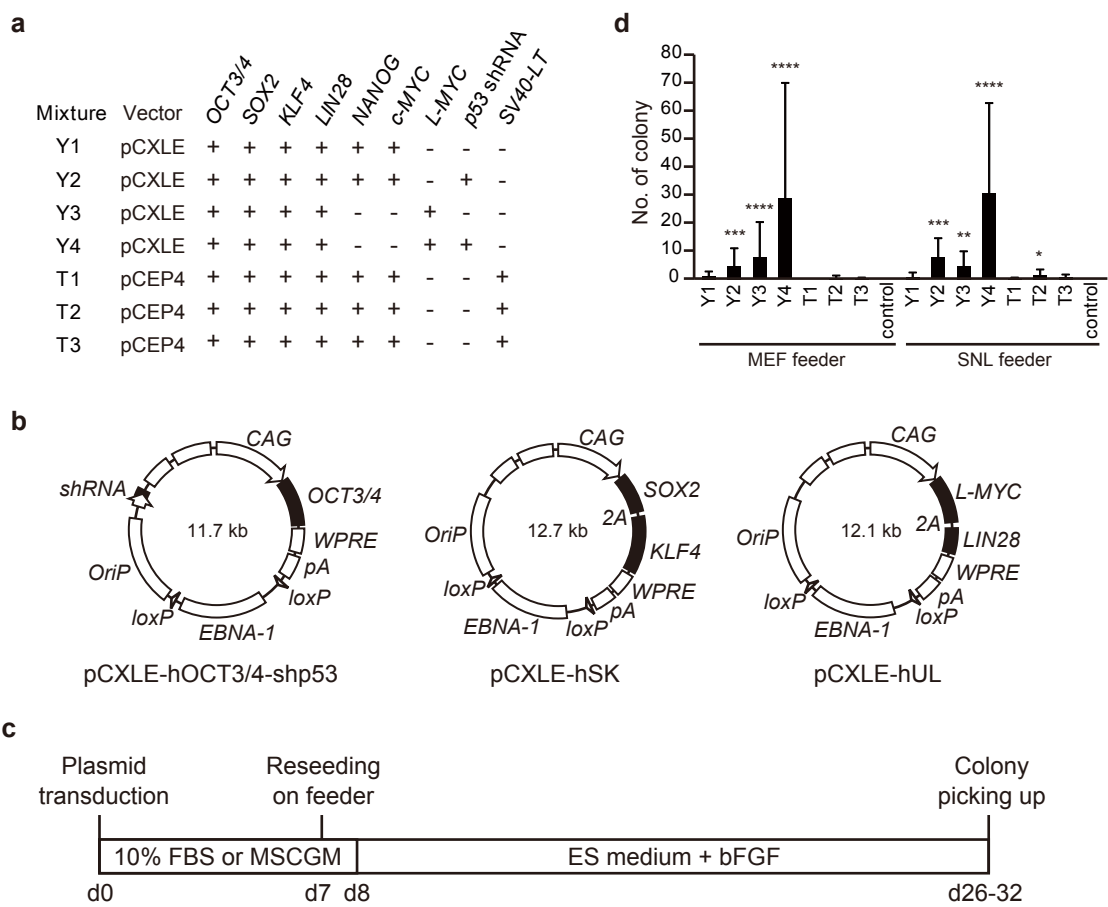


Figure 2, Okita et al.

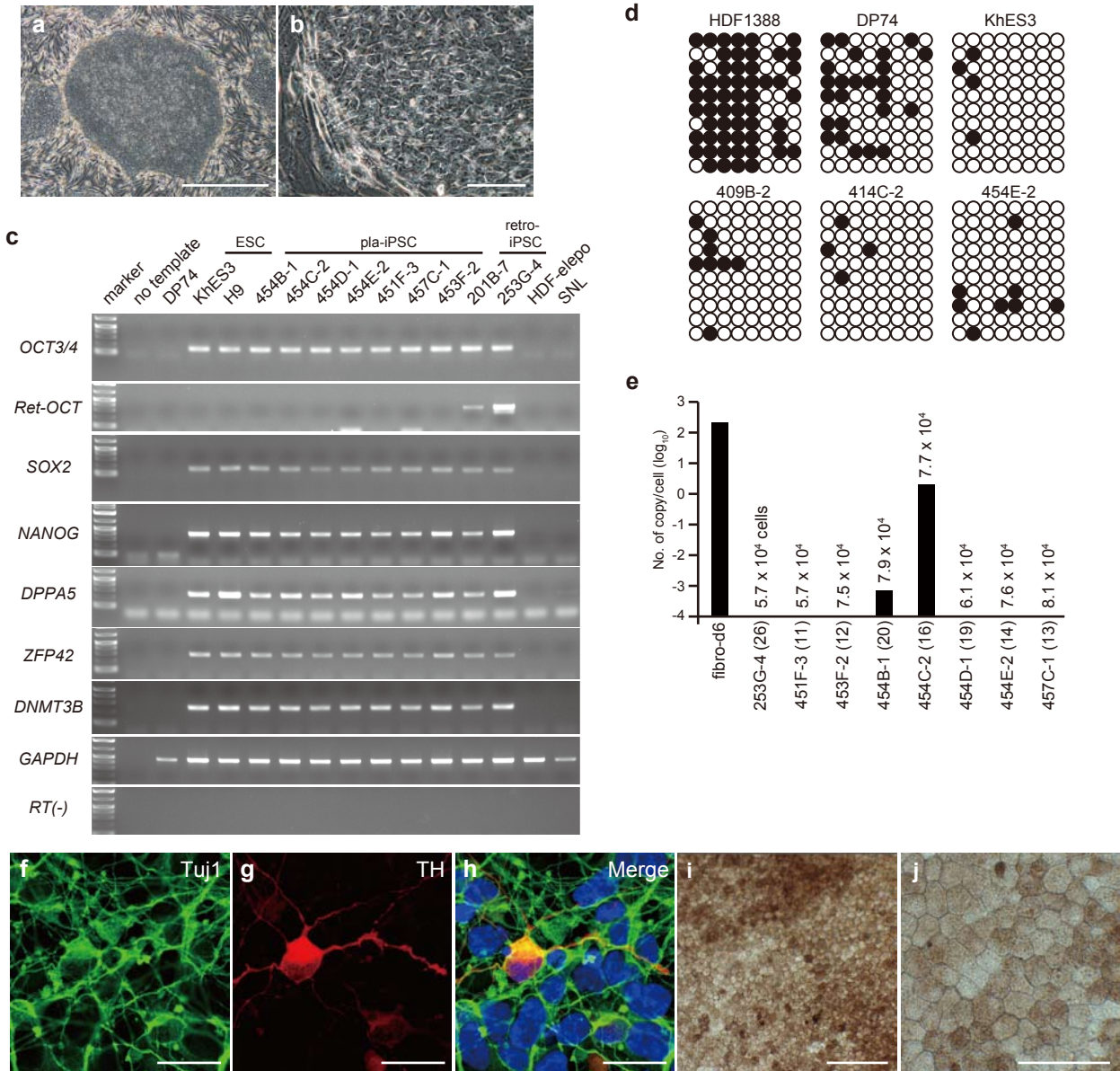
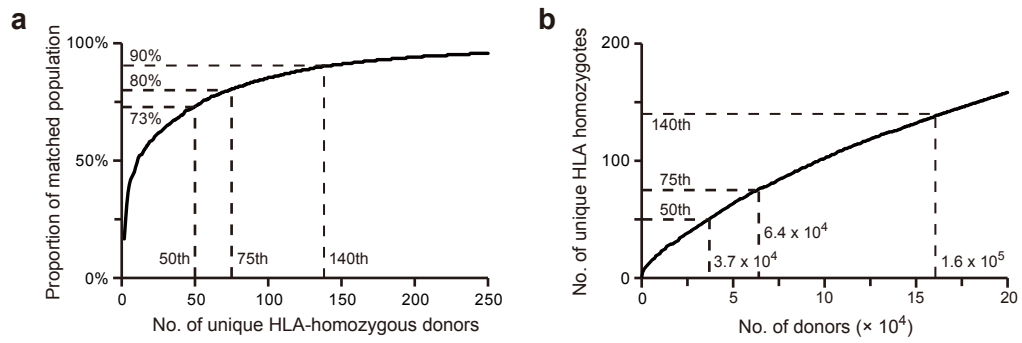
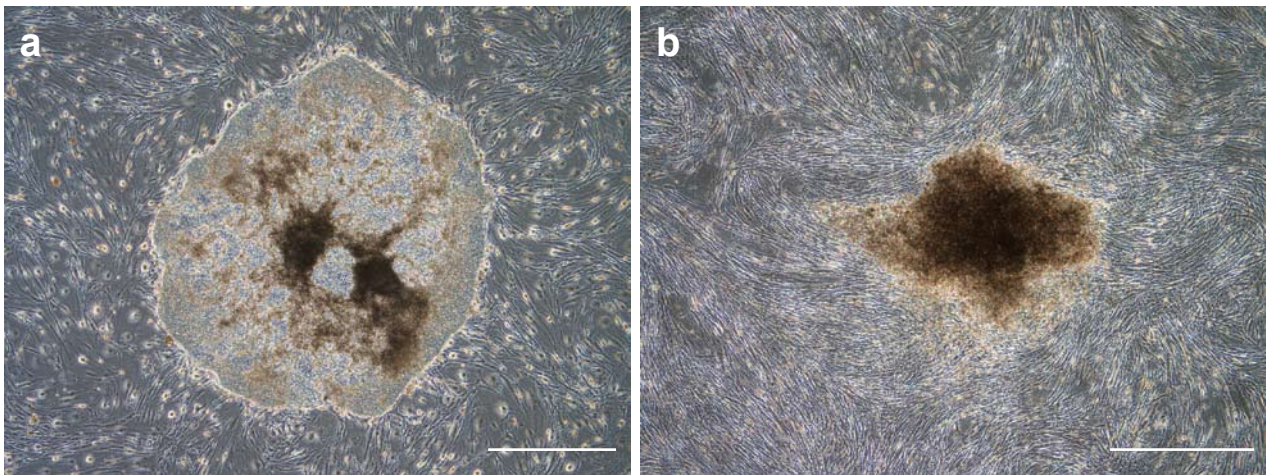


Figure 3, Okita et al.

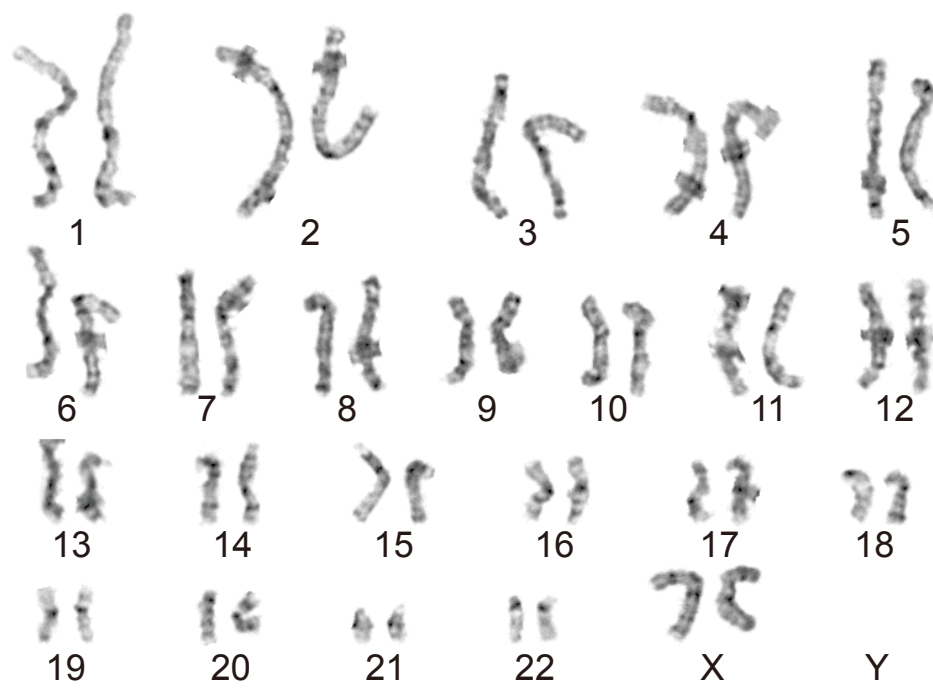




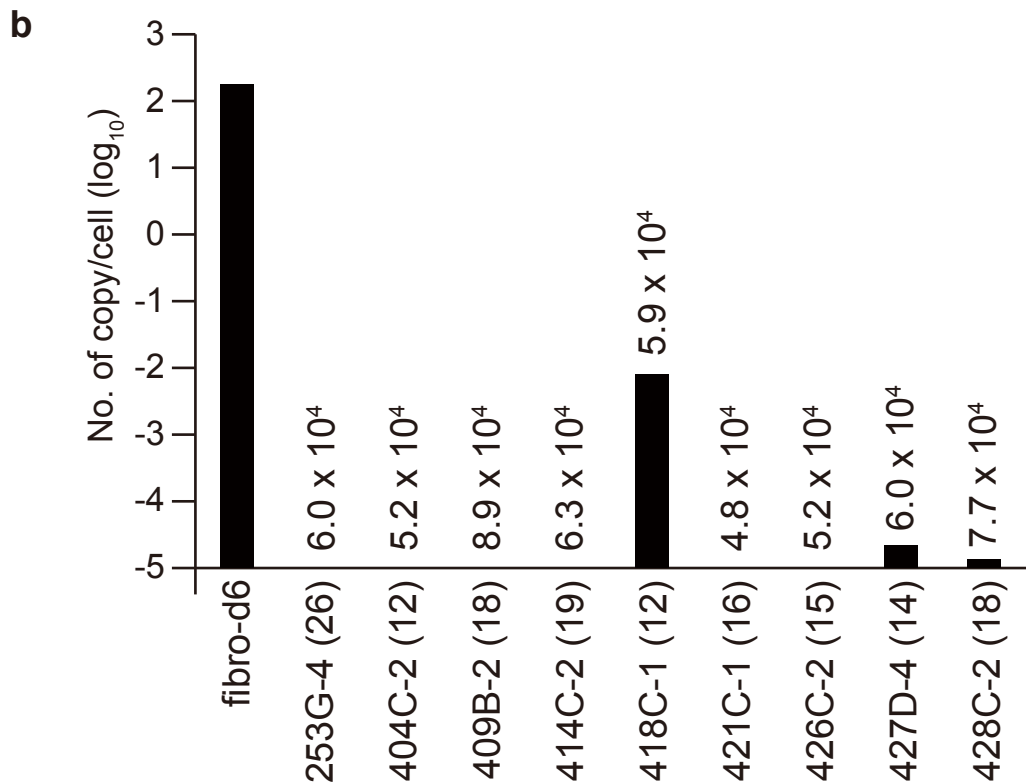
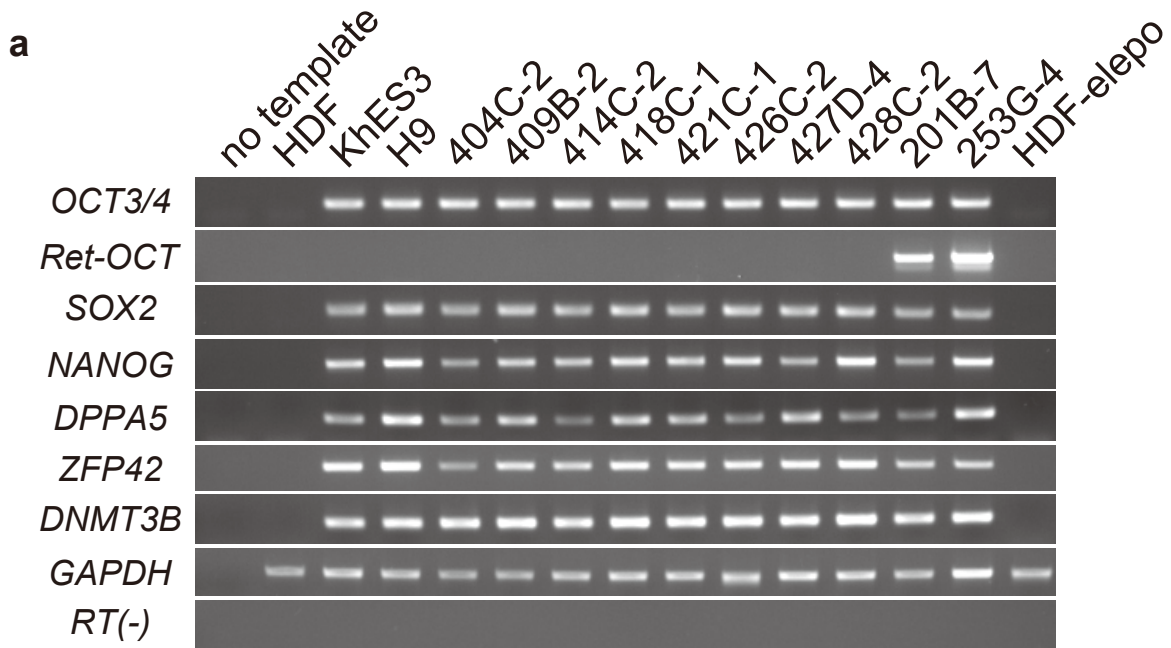
Supplementary Figure 1. Morphology of induced colonies.

(a) Morphology of an ESC-like colony. Bar = 1 mm. (b) Morphology of a non-ESC-like colony. Bar = 1 mm.





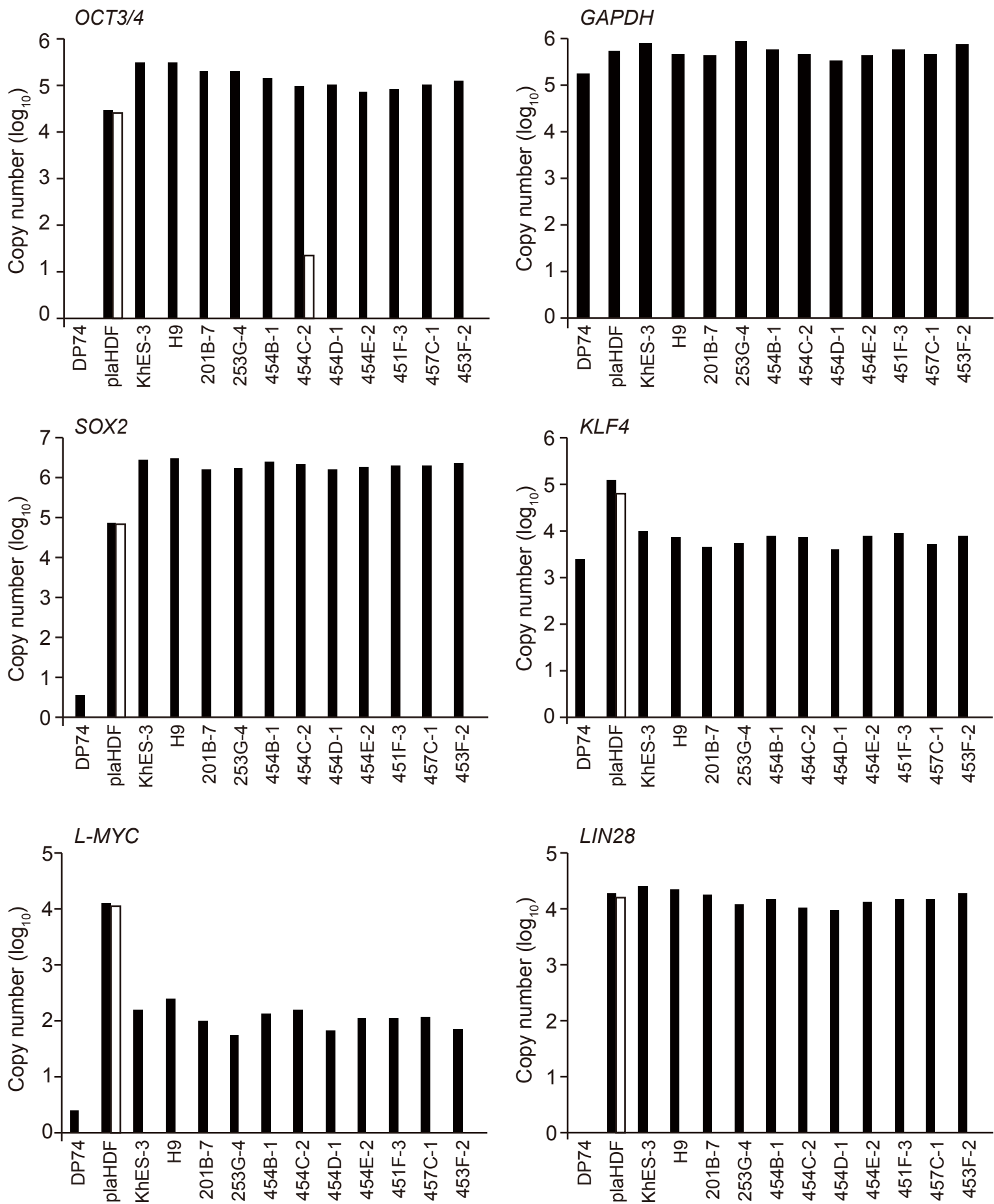
Supplementary Figure 2. G-band staining of a pla-iPSC clone (409B-2).



Supplementary Figure 3.

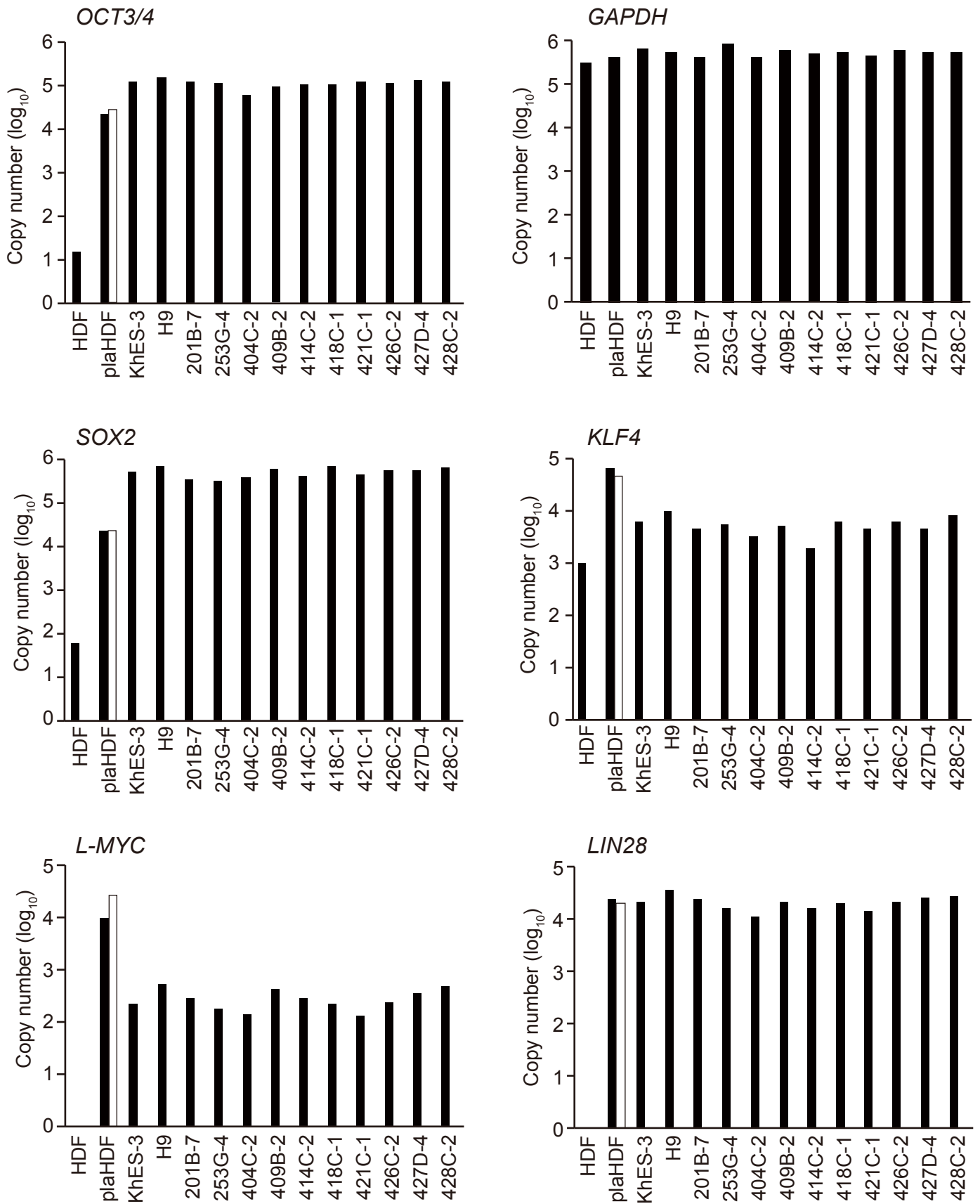
Gene expression and copy number of the episomal plasmids in fibroblast-derived pla-iPSCs.

(a) Expressions of pluripotent cell marker genes by an RT-PCR analysis. Pla-iPSCs established with the Y4 mix from various fibroblasts (404C-2, 409B-2, 414C-2, 418C-1, 421C-1, 426C-2, 427D-4, and 428C-2), retrovirus-derived iPSCs (201B-7 and 253G-4), and ESCs (KhES-3 and H9) were used for the analyses. Endogenous *OCT3/4* (*OCT3/4*), retrovirus-derived *OCT3/4* (*Ret-OCT*), and endogenous *SOX2* (*SOX2*) were examined. *GAPDH* was examined as a loading control. For the control, fibroblasts were examined 4 days after electroporation of Y4 mixture (HDF-elepo). (b) Copy numbers of episomal vectors that remained in the Pla-iPSC clones. Established clones were harvested, lysed, and used for the quantitative PCR analyses. In several clones, including 404C-2 and 409B-2, we were unable to detect any episomal vectors. The numbers in parentheses indicate the passage number. The examined cell numbers are also indicated. For the control, retrovirus-derived iPSC clone (253G-4) and fibroblasts at 6 days after electroporation of Y4 mixture (fibro-d6) were analyzed.

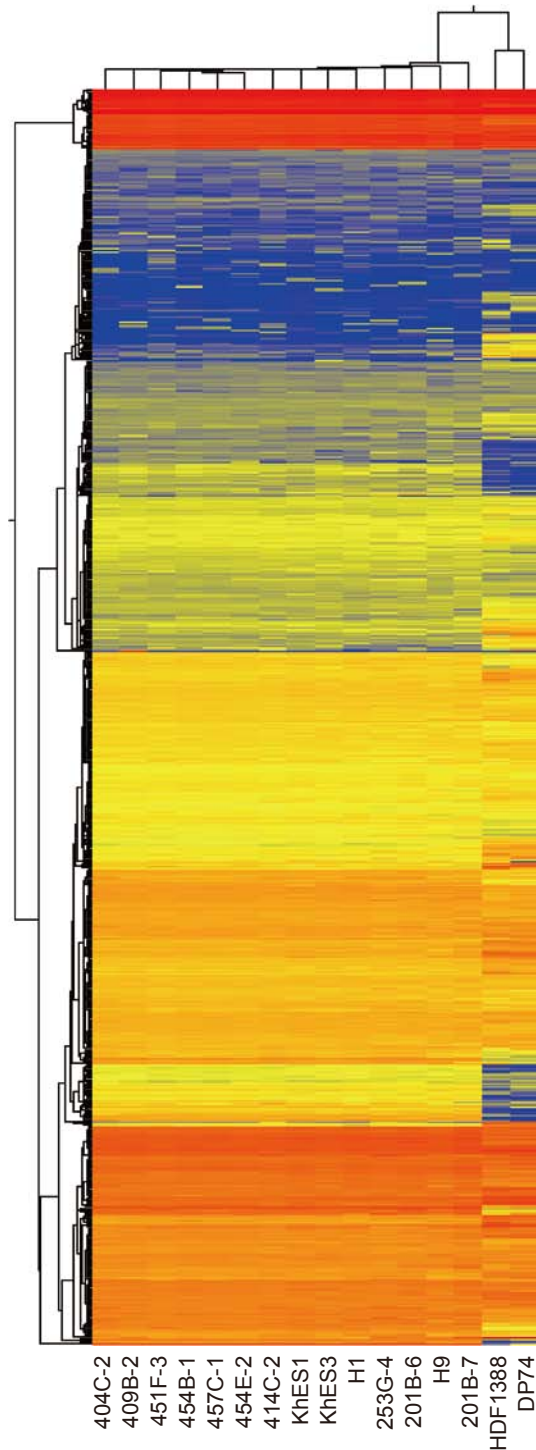


Supplementary Figure 4. Quantitative PCR for detection of transgenic expression in DP-derived pla-PSCs.

Total RNA was isolated from ESCs (KhES-3 and H9), retrovirus-derived iPSCs (201B-7 and 253G-4), and pla-iPSCs (454B-1 established by Y1 mix, 454C-2 by Y2, 454D-1 by Y3, 454E-2, 451F-3, 457C-1, and 453F-2 by Y4), and were used for the RT-PCR analyses. White columns show the copy numbers obtained with specific primers to the episomal vector of the indicated genes. Black columns show the copy numbers obtained with primers for the coding sequence, which could detect both endogenous and episomal vector-derived transcripts. For the controls, fibroblasts at 4 days after electroporation of Y4 mixture were analyzed (plaHDF).



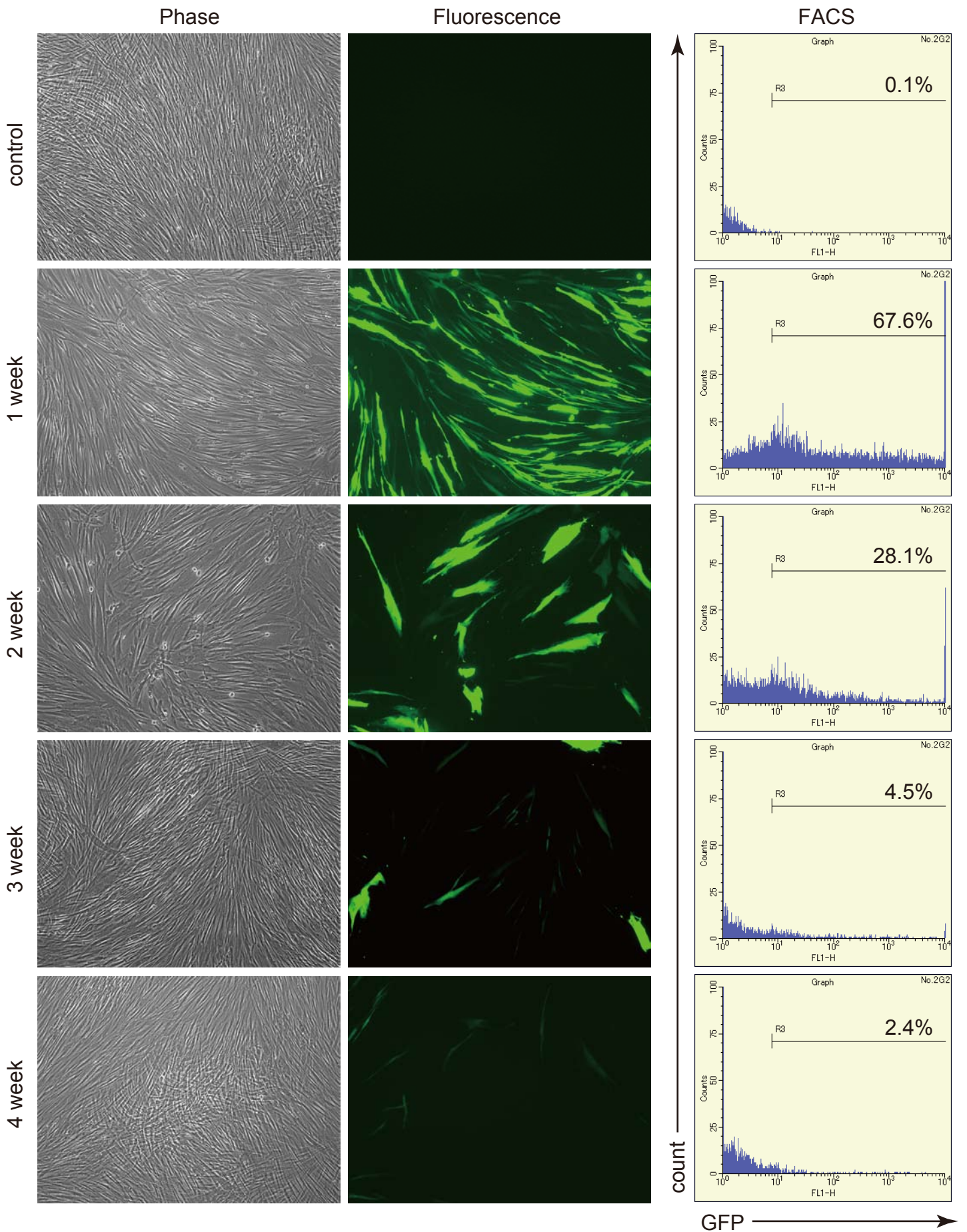
Supplementary Figure 5. Quantitative PCR for the detection of transgene expression in fibroblast-derived pla-iPSCs. Total RNA was extracted from ESCs (KhES-3 and H9), retrovirus-derived iPSCs (201B-7 and 253G-4), and pla-iPSCs (404C-2, 409B-2, 414C-2, 418C-1, 421C-1, 426C-2, 427D-4, and 428C-2), and were used for the RT-PCR analyses. White columns show the copy numbers obtained with specific primers against the episomal vector of the indicated genes. Black columns show the copy numbers obtained with primers for the coding sequence, which could detect both endogenous and episomal vector-derived transcripts. As a control, fibroblasts at 4 days after electroporation of Y4 mixture were analyzed (plaHDF).



Supplementary Figure 6. Comparison of the global gene expression profiles.

Unsupervised clustering was performed using microarray data from ESC clones (KhES1, KhES3, H1, and H9), pla-iPSC clones (404C-2, 409B-2, 414C-2, 451F-3, 454B-1, 454E-2, and 457C-1), retrovirus-derived iPSC clones (201B-6, 201B-7, and 253G-4), fibroblasts (HDF1388), and DP cells (DP74).

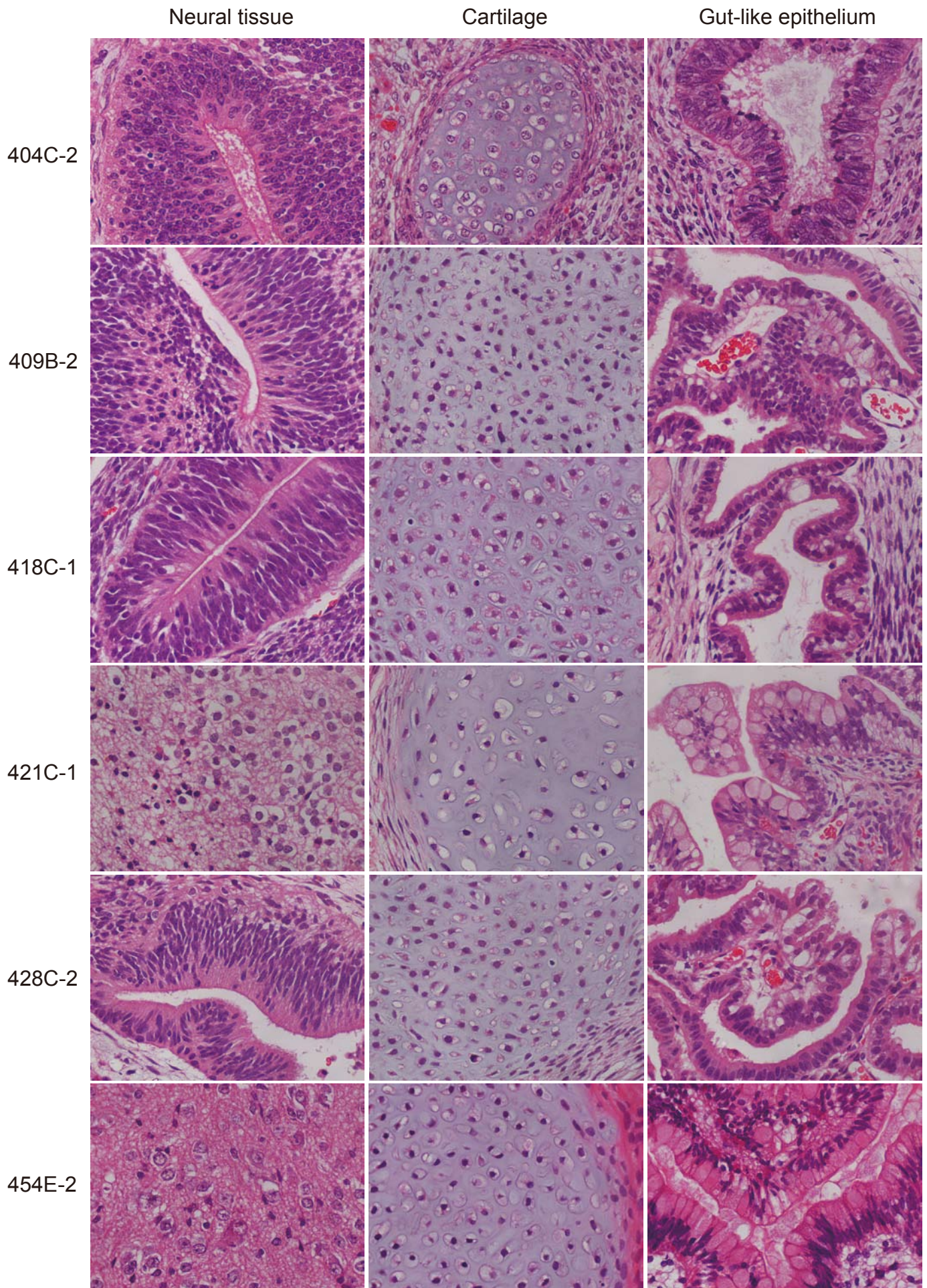




Supplementary Figure 7. Expression of GFP fluorescence from episomal vector.

Human fibroblasts were transduced with an episomal vector encoding GFP via electroporation. The cells were photographed and analyzed by flow cytometry at 1, 2, 3, and 4 weeks after transduction.



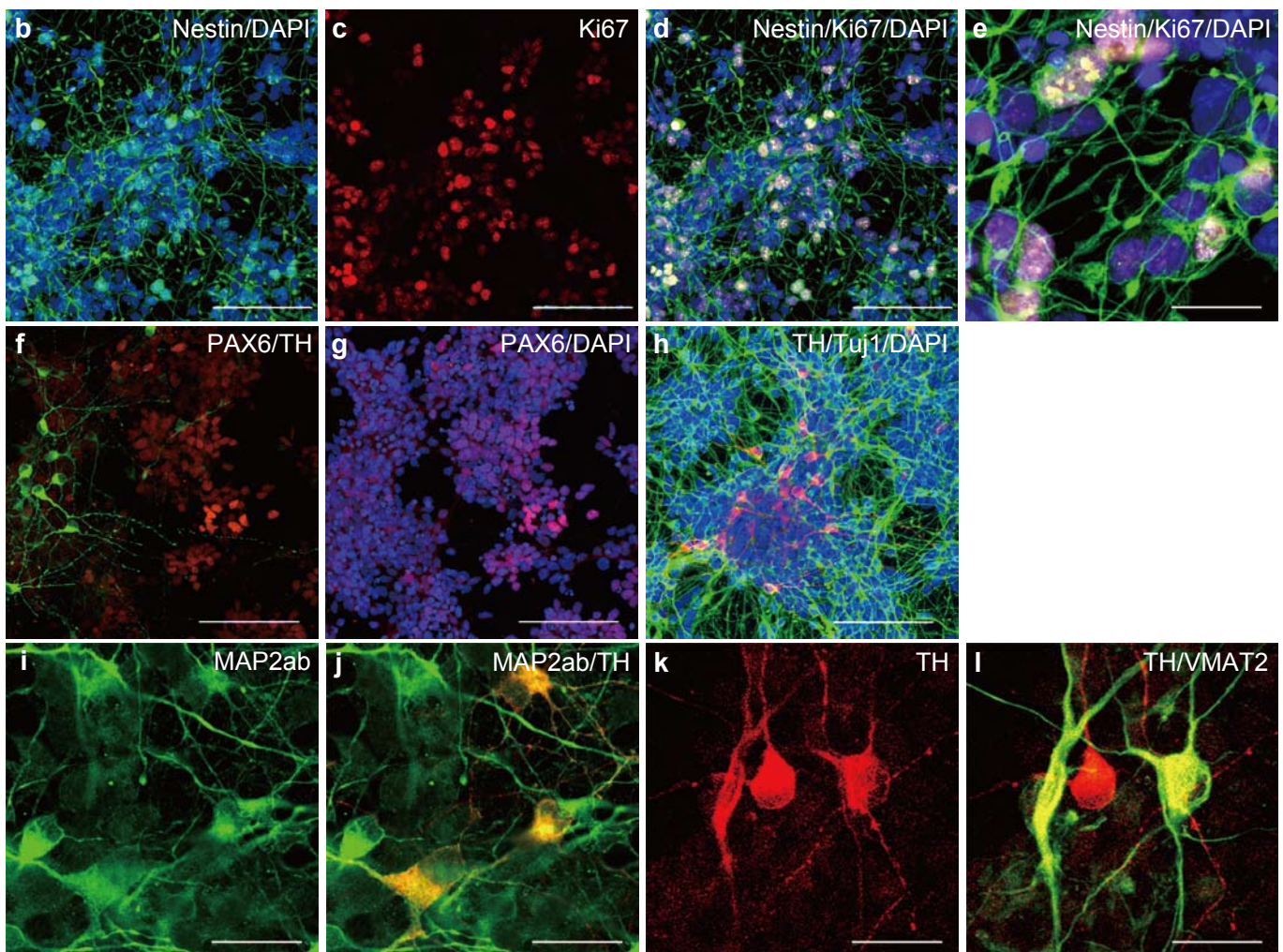
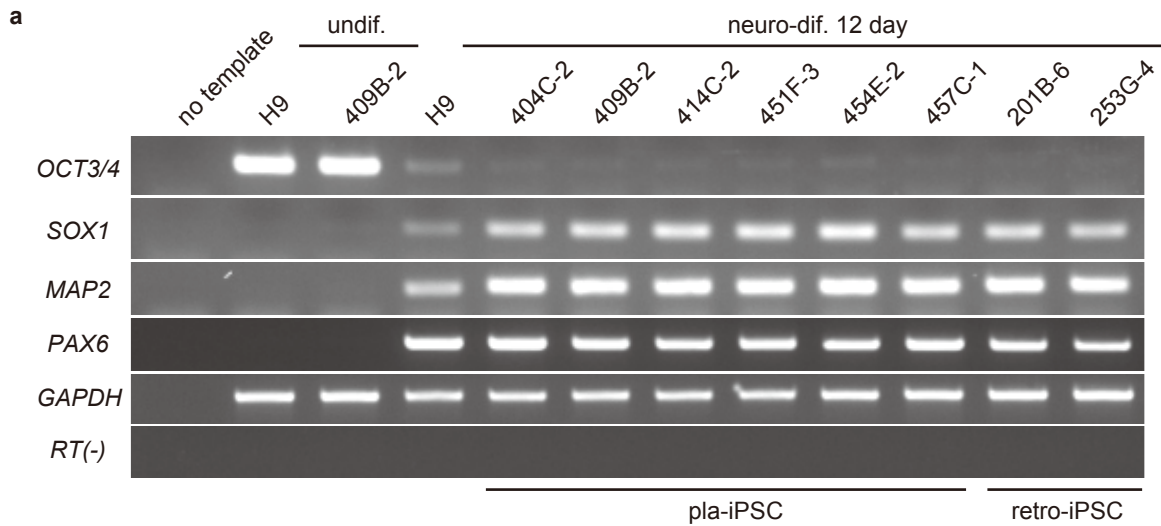


50  $\mu$ m

Supplementary Figure 8. Teratoma derived from pla-iPSCs.

Hematoxylin and eosin staining of teratoma derived from the indicated iPSC clones.





Supplementary Figure 9. Differentiation of pla-iPSCs into dopamine neurons.

(a) Expression of neural marker genes (*SOX1*, *MAP2*, and *PAX6*) detected by RT-PCR analysis. Total RNA was isolated from H9 ESCs, pla-iPSCs, and retro-iPSCs under undifferentiation condition (undif.) or 12 days after neural differentiation (neuro-dif.). (b-l) Twenty-nine days after induction using serum-free culture of embryoid body-like aggregates (SFEB) combined with double SMAD inhibition by a BMP antagonist and an Activin/Nodal inhibitor, the pla-iPSC clone, 454E-2, had differentiated into neurons. (b-d) Double immunostaining for Nestin (green) and Ki67 (red) with DAPI nuclear staining (blue). A high magnification image is shown in (e). (f and g) Double immunostaining for PAX6 (red) and TH (green) with DAPI nuclear staining (blue) in a same visual field. (h) Double immunostaining for TH (red) and TuJ1 (green) with DAPI. (i and j) Double immunostaining for TH (red) and MAP2ab (green). (k and l) Double immunostaining for TH (Red) and the vesicular monoamine transporter 2 (VMAT2, green). Scale bars: 100 μm in (b-e, f-h); 20 μm in (e, i-l).



Supplementary Table 1. Comparison of integration-free methods of human iPSC generation.

Method	Efficiency <sup>a</sup>	iPSC generation from adult cells	Preparation of materials	Delivery procedure	Removal of exogenous factors	References
Adenovirus	+ ( $2 \times 10^{-6}$ ) <sup>b</sup>	Not tested	+ <sup>h</sup>	++ (2 infections)	++ <sup>l</sup>	<sup>n</sup>
Sendai virus	+++ ( $1 \times 10^{-2}$ ) <sup>c</sup>	++ (1 HDF, 1 T cell)	+ <sup>h</sup>	+++ (1 infection)	+ <sup>m</sup>	<sup>o, p</sup>
Episomal plasmid	++ ( $3.9 \times 10^{-4}$ ) <sup>d</sup>	+++ (8 HDF, 2 DP)	+++	+++ (1 transfection)	++ <sup>l</sup>	
Minicircle DNA	+ ( $5 \times 10^{-5}$ ) <sup>e</sup>	++ (3 ASC)	+ <sup>i</sup>	+ (3 transfections, FACS sorting)	++ <sup>l</sup>	<sup>q</sup>
RNA	+++ ( $4.4 \times 10^{-2}$ ) <sup>f</sup>	+ (1 HDF)	+ <sup>j</sup>	+ (16 daily transfections)	+++	<sup>r</sup>
Protein	+ ( $2.6 \times 10^{-5}$ ) <sup>g</sup>	Not tested	+ <sup>k</sup>	+ (6 cycle treatments)	+++	<sup>s</sup>

<sup>a</sup>The highest figure reported in each study.

<sup>b</sup>IMR90 embryonic fibroblasts.

<sup>c</sup>BJ neonate fibroblasts.

<sup>d</sup>Adult fibroblasts.

<sup>e</sup>Adult adipose stem cells (ASC), after sorting of transfected cells.

<sup>f</sup>Fibroblasts produced by directed differentiation of H1 ESC.

<sup>g</sup>Newborn fibroblasts.

<sup>h</sup>Production of virus in packaging cells.

<sup>i</sup>Construction of minicircle vectors.

<sup>j</sup>*in vitro* transcription with modified nucleotide.

<sup>k</sup>Production of proteins in HEK293 cells.

<sup>l</sup>Rare integration events need to be ruled out.

<sup>m</sup>Sendai virus tend to replicate in cytoplasm.

<sup>n</sup>Zhou, W. & Freed, C.R. Adenoviral gene delivery can reprogram human fibroblasts to induced pluripotent stem cells. *Stem Cells* **27**, 2667-2674 (2009).

<sup>o</sup>Fusaki, N., Ban, H., Nishiyama, A., Saeki, K. & Hasegawa, M. Efficient induction of transgene-free human pluripotent stem cells using a vector based on Sendai virus, an RNA virus that does not integrate into the host genome. *Proc Jpn Acad Ser B Phys Biol Sci* **85**, 348-362 (2009).

<sup>p</sup>Seki, T., *et al.* Generation of induced pluripotent stem cells from human terminally differentiated circulating T cells. *Cell Stem Cell* **7**, 11-14 (2010).

<sup>q</sup>Jia, F., *et al.* A nonviral minicircle vector for deriving human iPS cells. *Nat Methods* **7**, 197-199 (2010).

<sup>r</sup>Warren, L., *et al.* Highly Efficient Reprogramming to Pluripotency and Directed Differentiation of Human Cells with Synthetic Modified mRNA. *Cell Stem Cell* **7**, 618-30 (2010).

<sup>s</sup>Kim, D.H., *et al.* Generation of Human Induced Pluripotent Stem Cells by Direct Delivery of Reprogramming Proteins. *Cell Stem Cell* **4**, 472-476 (2009).

Supplementary Table 2. Summary of plasmid mixtures.

Mixture name	Plasmid name	Amount ( $\mu\text{g}$ )	Genes
Y1	pCXLE-hOCT3/4	1	<i>OCT3/4</i>
	pCXLE-hSK	1	<i>SOX2, KLF4</i>
	pCXLE-hMLN	1	<i>c-MYC, LIN28, NANOG</i>
Y2	pCXLE-hOCT3/4-shp53	1	<i>OCT3/4, p53</i> shRNA
	pCXLE-hSK	1	<i>SOX2, KLF4</i>
	pCXLE-hMLN	1	<i>c-MYC, LIN28, NANOG</i>
Y3	pCXLE-hOCT3/4	1	<i>OCT3/4</i>
	pCXLE-hSK	1	<i>SOX2, KLF4</i>
	pCXLE-hUL	1	<i>L-MYC, LIN28</i>
Y4	pCXLE-hOCT3/4-shp53	1	<i>OCT3/4, p53</i> shRNA
	pCXLE-hSK	1	<i>SOX2, KLF4</i>
	pCXLE-hUL	1	<i>L-MYC, LIN28</i>
T1	pEP4EO2SET2K	1.125	<i>OCT3/4, SOX2, SV40LT, KLF4</i>
	pEP4EO2SEN2K	1.125	<i>OCT3/4, SOX2, NANOG, KLF4</i>
	pCEP4-M2L	0.75	<i>c-MYC, LIN28</i>
T2	pEP4EO2SET2K	0.91	<i>OCT3/4, SOX2, SV40LT, KLF4</i>
	pEP4EO2SCK2MEN2L	2.09	<i>OCT3/4, SOX2, KLF4, c-MYC, NANOG, LIN28</i>
T3	pEP4EO2SET2K	0.8	<i>OCT3/4, SOX2, SV40LT, KLF4</i>
	pEP4EO2SEN2L	1.05	<i>OCT3/4, SOX2, NANOG, LIN28</i>
	pEP4EO2SEM2K	1.15	<i>OCT3/4, SOX2, c-MYC, KLF4</i>

Supplementary Table 3. Summary of the iPSC induction experiments.

Parental cells	Exp. ID	Factors	MEF feeder		SNL feeder	
			non ES-like	ES-like	non ES-like	ES-like
HDF1419	438	Y1	1	0	0	1
		Y2	24	17	5	17
		Y3	18	8	5	11
		Y4	81	60	66	108
		control	0	0	0	0
	449	Y4	47	134	43	150
	control	0	0	0	0	
TIG121	380	Y1	2	3	0	0
		Y2	11	10	1	4
		Y3	9	23	0	0
		Y4	24	97	5	11
		control	0	0	0	0
TIG120	380	Y1	1	3	0	0
		Y2	7	11	1	2
		Y3	4	16	0	4
		Y4	37	71	17	25
		control	0	0	0	0
	428	Y1	0	1	0	0
		Y2	5	10	3	0
		Y3	-	-	2	1
		Y4	20	61	3	15
		control	0	0	0	0
	448	Y1	0	3	0	0
		Y2	2	12	0	4
		Y3	4	30	1	1
		Y4	23	92	6	19
		T1	7	0	14	0
		T2	8	0	1	0
		T3	20	0	5	0
		control	0	0	0	0
	455	Y1	3	5	0	0
		Y2	5	24	1	8
		Y3	9	45	2	9
		Y4	37	154	10	67
		T1	15	0	8	0
		T2	11	0	1	1
		T3	48	0	6	1
		control	0	0	0	0
	522	Y1	1	1	0	0
		Y2	4	4	2	2
		Y3	2	0	0	0
		Y4	5	16	2	3
		T1	4	0	0	0
		T2	1	0	0	0
T3		6	0	0	0	
control		0	0	0	0	
HDF1388	404	Y1	0	0	0	0
		Y2	0	1	0	0
		Y3	1	2	0	0
		Y4	1	5	0	2

		control	0	0	0	0
	409	Y1	0	0	0	0
		Y2	0	0	0	0
		Y3	0	2	0	0
		Y4	2	12	0	1
		T1	9	0	5	0
		T2	14	4	3	5
		T3	56	2	36	1
			control	0	0	0
	414	Y1	0	0	0	0
		Y2	4	1	1	0
		Y3	0	1	0	0
		Y4	3	9	0	2
		T1	5	0	3	0
		T2	30	0	1	6
		T3	18	0	5	0
		control	0	0	0	0
	415	Y1	0	0	0	0
		Y2	0	0	1	0
		Y3	0	0	0	0
		Y4	1	5	2	1
		T1	13	0	3	0
		T2	28	0	0	2
		T3	26	0	12	0
		control	0	0	0	0
	417	Y1	0	0	0	0
		Y2	103	0	0	0
		Y3	0	1	0	0
		Y4	1	4	0	3
			control	0	0	0
TIG114	418	Y1	0	0	0	0
		Y2	1	0	1	0
		Y3	2	0	0	0
		Y4	12	4	0	1
			control	0	0	0
HDF1377	436	Y1	3	1	0	0
		Y2	78	2	3	1
		Y3	7	8	1	1
		Y4	27	26	8	11
		T2	16	0	2	0
			control	0	0	0
HDF1429	437	Y4	34	50	4	24
		T2	22	0	1	0
			control	0	0	0
HDF1437	427 <sup>a</sup>	Y1	5	0	0	1
		Y2	9	1	0	1
		Y3	11	2	3	5
		Y4	27	4	2	12
			control	0	0	0
	460	Y1	0	0	0	0
		Y2	6	0	1	3
		Y3	15	2	0	1
		Y4	43	11	19	29
		T1	9	0	10	0

		T2	18	0	8	1
		T3	25	0	19	0
		control	0	0	0	0
	466	Y1	0	0	0	0
		Y2	21	0	4	13
		Y3	22	0	0	8
		Y4	174	44	81	100
		T1	13	0	8	0
		T2	10	0	3	0
		T3	38	0	40	0
		control	0	0	0	0
	521	Y1	0	0	0	0
		Y2	5	1	0	3
		Y3	1	0	0	0
		Y4	17	5	6	11
		T1	14	0	2	0
		T2	5	0	3	0
		T3	32	0	19	0
		control	0	0	0	0
HDF1554	426	Y1	0	0	0	0
		Y2	1	0	0	0
		Y3	2	0	0	0
		Y4	6	0	1	2
		control	0	0	0	0
	465	Y1	0	0	0	1
		Y2	6	0	1	2
		Y3	4	0	0	0
		Y4	35	0	8	22
		control	0	0	0	0
	468	Y1	0	0	0	0
		Y2	7	0	1	2
		Y3	2	0	1	2
		Y4	11	5	11	25
		control	0	0	0	0
TIG107	421	Y1	1	0	-	-
		Y2	9	0	-	-
		Y3	0	0	-	-
		Y4	3	4	-	-
		control	0	0	-	-
	478	Y1	0	0	0	0
		Y2	0	0	0	0
		Y3	0	0	0	0
		Y4	2	5	0	0
		Y4	0	2	0	0
		control	0	0	0	0
DP74	451	Y1	0	0	0	0
		Y2	5	8	3	13
		Y3	2	5	3	7
		Y4	7	27	10	83
		T2	1	0	1	4
		T3	0	0	3	0
		control	0	0	0	0
	454	Y1	0	5	0	3
		Y2	8	12	2	11

DP94	457	Y3	4	8	2	11	
		Y4	10	20	10	27	
		T1	0	0	0	0	
		T2	0	0	1	4	
		T3	0	0	0	1	
		control	0	0	0	0	
		Y1	1	0	0	0	
		Y2	2	0	0	3	
	469	Y3	2	2	0	1	
		Y4	2	7	2	13	
		T1	0	0	0	0	
		T2	0	0	2	0	
		T3	1	0	6	0	
		control	0	0	0	0	
		Y1	2	0	1	1	
		Y2	4	6	4	14	
	446	Y3	8	11	4	17	
		Y4	28	23	18	97	
		T1	0	0	0	0	
		T2	2	0	1	2	
		T3	0	0	4	4	
		control	0	0	0	0	
		450	Y1	2	2	5	5
			Y2	17	4	19	21
	Y3		14	3	11	7	
	Y4		27	10	31	30	
	T1		0	0	3	1	
	T2		0	0	0	0	
T3	0		0	0	0		
control	0		0	0	0		
453	Y1	5	0	2	0		
	Y2	8	0	11	19		
	Y3	9	2	10	8		
	Y4	24	2	21	35		
	T1	0	0	2	1		
	T2	0	0	0	2		
	T3	0	0	3	1		
	control	0	0	0	0		
453	Y1	5	1	1	3		
	Y2	12	3	9	12		
	Y3	9	5	7	7		
	Y4	36	22	30	24		
	T1	0	0	1	0		
	T2	1	0	0	0		
	T3	0	0	0	0		
	control	0	0	0	0		

<sup>a</sup>In the exp. 427, only  $0.8 \times 10^5$  cells were plated onto SNL feeder cells.

\*Exp. ID 448, 455, 522, 409, 414, 415, 460, 466, 521, 454, 457, 469, 446, 450, and 453 were used for Fig. 1d.

Supplementary Table 4. Karyotype of episomal vector-derived iPSCs.

Clone	passage	Karyotype	origin	Age	Sex <sup>a</sup>	Race <sup>b</sup>	factors
			fibroblasts				
409B-2	p19	46,XX [20]	HDF1388	36	F	C	Y4
414C-2	p19	46,XX [20]	HDF1388	36	F	C	Y4
418C-1	p19	46,XY [20]	TIG114	36	M	J	Y4
421C-1	p19	46,XX [20]	TIG107	81	F	J	Y4
426C-2	p14	46,XX [20]	HDF1554	77	F	C	Y4
427D-4	p13	46,XY, add(3)(q13.2) [20]	HDF1437	56	M	C	Y4
428C-2	p20	46,XX [20]	TIG120	6	F	J	Y4
			DP cells				
451F-3	p9	46,XX [20]	DP74	16	F	J	Y4
453F-2	p12	46,XX [20]	DP94	16	F	J	Y4
454B-1	p12	46,XX [20]	DP74	16	F	J	Y1
454C-2	p10	46,XX [20]	DP74	16	F	J	Y2
454D-1	p11	46,XX [20]	DP74	16	F	J	Y3
454E-2	p12	46,XX [20]	DP74	16	F	J	Y4
454F-1	p13	46,XX,add(17)(q25)[15] / 46,XX[5]	DP74	16	F	J	T2
457C-1	p12	46,XX [20]	DP74	16	F	J	Y4

<sup>a</sup>M, male; F, female

<sup>b</sup>J, Japanese; C, Caucasian.

SupplementaryTable 5. STR analyses of pla-iPSCs.

Locus/clone	HDF1388		409B-2		414C-2		DP74		454E-2		457C-1	
<i>D3S1358</i>	16	18	16	18	16	18	17		17		17	
<i>TH01</i>	6		6		6		7		7		7	
<i>D21S11</i>	29		29		29		29	30	29	30	29	30
<i>D18S51</i>	15		15		15		13	19	13	19	13	19
<i>Penta_E</i>	7	19	7	19	7	19	5	15	5	15	5	15
<i>D5S818</i>	12		12		12		12	13	12	13	12	13
<i>D13S317</i>	9	13	9	13	9	13	10	14	10	14	10	14
<i>D7S820</i>	9	10	9	10	9	10	11		11		11	
<i>D16S539</i>	11	13	11	13	11	13	9	10	9	10	9	10
<i>CSF1PO</i>	11		11		11		12	14	12	14	12	14
<i>Penta_D</i>	9	11	9	11	9	11	10	13	10	13	10	13
<i>AMEL</i>	X		X		X		X		X		X	
<i>vWA</i>	15	18	15	18	15	18	17	21	17	21	17	21
<i>D8S1179</i>	8	10	8	10	8	10	11	12	11	12	11	12
<i>TPOX</i>	8	9	8	9	8	9	8		8		8	
<i>FGA</i>	20	22	20	22	20	22	21	24	21	24	21	24



Supplementary Table 6. Pearson correlation coefficient table.

Cells	404C-2	409B-2	414C-2	451F-3	454B-1	454E-2	457C-1	201B-6	201B-7	253G-4	H1	H9	KhES1	KhES3	HDF1388	DP74	CellType
404C-2	1	0.99134	0.99538	0.99044	0.99031	0.99198	0.98828	0.99044	0.97643	0.99336	0.99492	0.97962	0.99175	0.98902	0.82664	0.85313	Pla-iPSCs
409B-2	0.99134	1	0.99169	0.99285	0.99592	0.99557	0.99460	0.98239	0.98645	0.98373	0.99082	0.99221	0.98944	0.99396	0.82676	0.85663	Pla-iPSCs
414C-2	0.99538	0.99169	1	0.99241	0.99252	0.99232	0.99139	0.99200	0.97867	0.99466	0.99332	0.98108	0.99549	0.98914	0.83475	0.86055	Pla-iPSCs
451F-3	0.99044	0.99285	0.99241	1	0.99668	0.99784	0.99786	0.98416	0.98480	0.98417	0.99305	0.98925	0.99432	0.99540	0.83299	0.86326	Pla-iPSCs
454B-1	0.99031	0.99592	0.99252	0.99668	1	0.99840	0.99856	0.98459	0.98912	0.98475	0.99225	0.99269	0.99324	0.99471	0.83082	0.86259	Pla-iPSCs
454E-2	0.99198	0.99557	0.99232	0.99784	0.99840	1	0.99809	0.98424	0.98611	0.98469	0.99286	0.99199	0.99286	0.99596	0.83134	0.86163	Pla-iPSCs
457C-1	0.98828	0.99460	0.99139	0.99786	0.99856	0.99809	1	0.98275	0.98878	0.98256	0.99213	0.99286	0.99335	0.99577	0.83051	0.86185	Pla-iPSCs
201B-6	0.99044	0.98239	0.99200	0.98416	0.98459	0.98424	0.98275	1	0.97506	0.99221	0.98866	0.97083	0.99045	0.97956	0.82601	0.85383	Retro-iPSCs
201B-7	0.97643	0.98645	0.97867	0.98480	0.98912	0.98611	0.98878	0.97506	1	0.97174	0.98394	0.98785	0.98483	0.98621	0.81791	0.85376	Retro-iPSCs
253G-4	0.99336	0.98373	0.99466	0.98417	0.98475	0.98469	0.98256	0.99221	0.97174	1	0.99009	0.97106	0.99112	0.98138	0.82652	0.85200	Retro-iPSCs
H1	0.99492	0.99082	0.99332	0.99305	0.99225	0.99286	0.99213	0.98866	0.98394	0.99009	1	0.98488	0.99498	0.99393	0.82599	0.85782	ESCs
H9	0.97962	0.99221	0.98108	0.98925	0.99269	0.99199	0.99286	0.97083	0.98785	0.97106	0.98488	1	0.98325	0.99272	0.81722	0.85115	ESCs
KhES1	0.99175	0.98944	0.99549	0.99432	0.99324	0.99286	0.99335	0.99045	0.98483	0.99112	0.99498	0.98325	1	0.99191	0.83019	0.85962	ESCs
KhES3	0.98902	0.99396	0.98914	0.99540	0.99471	0.99596	0.99577	0.97956	0.98621	0.98138	0.99393	0.99272	0.99191	1	0.82553	0.85750	ESCs
HDF1388	0.82664	0.82676	0.83475	0.83299	0.83082	0.83134	0.83051	0.82601	0.81791	0.82652	0.82599	0.81722	0.83019	0.82553	1	0.96628	Fibroblasts
DP74	0.85313	0.85663	0.86055	0.86326	0.86259	0.86163	0.86185	0.85383	0.85376	0.85200	0.85782	0.85115	0.85962	0.85750	0.96628	1	DP cells

Supplementary Table 7. HLA Type of 107 Individuals.

No.	Cell line	HLA-A		HLA-B		HLA-DRB1		Match
1	DP1	*24	*33	*40	*44	*04	*13	
2	DP4	*03	*24	*07	*13	*01	*07	
3	DP6	*02	*02	*35	*40	*04	*09	
4	DP7	*03	*24	*44	*52	*09	*15	DP74
5	DP10	*24	*26	*13	*52	*12	*15	DP74
6	DP12	*24	*31	*07	*56	*01	*14	
7	DP13	*31	-	*40	*51	*08	*09	
8	DP14	*24	*31	*15	*52	*09	*15	DP74
9	DP15	*02	*02	*15	*46	*08	*14	
10	DP17	*24	*26	*52	*54	*09	*15	DP74
11	DP20	*26	*33	*44	*46	*04	*08	
12	DP25	*02	*24	*35	*51	*04	*08	
13	DP26	*02	*02	*15	*35	*04	*12	
14	DP28	*02	*31	*35	*46	*04	*08	
15	DP30	*24	*31	*15	*52	*09	*15	DP74
16	DP31	*11	*31	*48	*55	*09	*11	
17	DP32	*24	*26	*40	*40	*04	*08	
18	DP33	*24	*26	*52	*54	*14	*15	DP74
19	DP35	*33	-	*44	-	*08	*13	
20	DP38	*11	*31	*40	*51	*04	*14	
21	DP39	*11	*24	*15	*40	*04	*15	DP94
22	DP40	*24	*26	*15	*52	*14	*15	DP74
23	DP41	*24	*26	*54	*54	*01	*04	
24	DP42	*24	*24	*07	*51	*01	*08	
25	DP44	*24	*24	*40	*52	*12	*15	DP74
26	DP46	*11	*24	*15	*51	*04	*14	DP94
27	DP48	*24	*26	*15	*52	*14	*15	DP74
28	DP49	*24	*33	*07	*44	*01	*08	
29	DP52	*11	*26	*55	*67	*08	*16	
30	DP53	*24	*31	*07	*54	*01	*04	
31	DP54	*02	*26	*40	*46	*08	*09	
32	DP56	*24	*24	*40	*52	*09	*15	DP74
33	DP57	*24	*33	*44	*54	*04	*13	
34	DP58	*24	*26	*40	*40	*11	*09	
35	DP59	*24	*24	*07	*15	*01	*14	
36	DP60	*02	*24	*46	*52	*08	*15	DP74
37	DP62	*24	*24	*48	*59	*04	*09	
38	DP64	*02	*02	*40	*46	*08	*14	
39	DP65	*24	*24	*40	*40	*09	*14	
40	DP66	*24	*24	*40	*51	*08	*11	
41	DP68	*24	*33	*15	*55	*04	*04	
42	DP69	*02	*24	*46	*52	*09	*15	DP74
43	DP72	*02	*11	*40	*46	*08	*15	
44	DP73	*02	*31	*15	*40	*08	*09	
45	DP74 <sup>#</sup>	*24	-	*52	-	*15	-	DP74
46	DP75	*02	*24	*15	*51	*08	-	
47	DP80	*31	*33	*44	*51	*09	*13	
48	DP81	*24	*24	*07	*52	*01	*15	DP74
49	DP83	*02	*26	*15	*40	*08	*15	
50	DP86	*24	*31	*51	*52	*09	*15	DP74
51	DP87	*24	*33	*51	*52	*14	*15	DP74
52	DP92	*02	*24	*15	*35	*04	*15	
53	DP94 <sup>#</sup>	*11	-	*15	-	*04	-	DP94
54	DP95	*24	*24	*35	*40	*04	*09	
55	DP96	*11	*24	*54	*58	*08	*13	
56	DP97	*24	*24	*52	*54	*04	*15	DP74
57	DP98	*02	*24	*48	*54	*04	-	
58	DP99	*24	*31	*15	*52	*08	*15	DP74

59	DP100	*02	*33	*35	*51	*04	*04	
60	DP101	*33	-	*44	-	*04	*13	
61	DP105	*02	*24	*35	*40	*04	*04	
62	DP106	*24	*26	*15	*40	*04	*13	
63	DP109	*24	*24	*46	*54	*04	*15	
64	DP111	*33	-	*44	-	*09	*13	
65	DP112	*26	*33	*44	*55	*13	*15	
66	DP113	*11	*24	*51	*54	*04	*08	
67	DP115	*02	*24	*51	*40	*09	*14	
68	DP128	*24	*24	*15	*37	*09	*10	
69	DP129	*02	*11	*39	*67	*04	*15	
70	DP134	*31	*33	*44	*51	*04	*13	
71	DP135	*33	-	*15	*44	*13	*14	
72	DP136	*11	*24	*52	*54	*08	*15	DP74
73	DP138	*02	*24	*40	*46	*08	*12	
74	DP140	*31	*33	*15	*39	*09	*15	
75	DP141	*02	*24	*40	*52	*15	*15	DP74
76	DP142	*02	*33	*15	*44	*09	*15	
77	DP143	*24	*24	*54	*52	*14	*15	DP74
78	DP144	*02	*33	*44	-	*13	-	
79	DP147	*24	*24	*51	*52	*04	*15	DP74
80	DP153	*02	*02	*15	*55	*04	-	
81	DP154	*02	*24	*15	*52	*15	*15	DP74
82	DP157	*02	*33	*07	*44	*01	*04	
83	DP158	*24	*33	*51	*52	*09	*15	DP74
84	DP159	*02	*24	*15	*46	*08	*15	
85	DP160	*02	*24	*40	*54	*04	*13	
86	DP163	*24	*26	*40	*46	*04	*09	
87	DP164	*02	*24	*39	*40	*12	-	
88	DP165	*24	*24	*07	*15	*01	*09	
89	DP166	*24	*33	*40	*44	*04	*16	
90	DP167	*24	*24	*40	*52	*04	*15	DP74
91	DP169	*02	*26	*40	*51	*08	*15	
92	DP170	*02	*24	*51	*54	*04	*09	
93	DP172	*02	*24	*40	*52	*04	*15	DP74
94	DP173	*01	*33	*37	*44	*10	*14	
95	DP174	*02	*24	*44	*48	*04	*13	
96	DP175	*02	*33	*07	*44	*01	*04	
97	DP176	*24	*24	*15	*40	*04	*09	
98	DP177	*24	*33	*40	*44	*13	*14	
99	DP178	*24	*24	*40	*52	*12	*15	DP74
100	DP179	*02	*24	*39	*51	*08	*15	
101	DP181	*02	*26	*46	*48	*08	*09	
102	DP182	*24	*31	*27	*59	*13	*15	
103	DP184	*24	*33	*44	*52	*13	*15	DP74
104	DP185	*02	*24	*39	*51	*15	-	
105	DP186	*02	*11	*54	-	*04	*14	
106	DP187	*02	*02	*13	*46	*08	*12	
107	DP193	*24	*26	*39	*52	*08	*15	DP74

#DP lines used for induction of pla-iPS cells in this study.  
This data was based on the results of 4-digit PCR-rSSOP.

DP74 covers 29, and DP94 covers 3 lines.  
Total coverage is 29.9% (32/107).

Supplementary Table 8. Haplotype frequency for HLA-A, B, and DRB1 loci in Japanese population.

Rank	HLA-A	HLA-B	HLA-DRB1	Haplotype Frequency	LD value <sup>a</sup>	RD value <sup>b</sup>	Cumulative matched
1	*24:02	*52:01	*15:02	8.468%	8.033%	0.786	16.922%
2	*33:03	*44:03	*13:02	4.081%	4.057%	0.737	24.285%
3	*24:02	*07:02	*01:01	3.746%	3.627%	0.654	31.171%
4	*24:02	*54:01	*04:05	2.609%	2.238%	0.312	36.584%
5	*02:07	*46:01	*08:03	2.003%	1.988%	0.573	39.908%
6	*11:01	*15:01	*04:06	1.281%	1.259%	0.397	42.065%
7	*24:02	*59:01	*04:05	1.062%	0.968%	0.535	43.797%
8	*11:01	*54:01	*04:05	0.958%	0.866%	0.116	45.112%
9	*24:02	*40:06	*09:01	0.866%	0.630%	0.146	47.274%
10	*26:01	*40:02	*09:01	0.843%	0.754%	0.100	49.000%
11	*24:02	*51:01	*09:01	0.756%	0.274%	0.031	50.972%
12	*31:01	*51:01	*08:02	0.606%	0.571%	0.134	52.049%
13	*26:02	*40:06	*09:01	0.600%	0.588%	0.319	52.738%
14	*24:02	*46:01	*08:03	0.548%	0.397%	0.084	53.795%
15	*02:01	*13:01	*12:02	0.468%	0.465%	0.383	54.578%
15	*11:01	*39:01	*08:03	0.468%	0.441%	0.129	55.333%
17	*24:02	*40:01	*09:01	0.456%	0.179%	0.035	56.329%
17	*26:01	*40:02	*08:02	0.456%	0.430%	0.101	56.996%
19	*33:03	*44:03	*08:03	0.450%	0.413%	0.067	57.691%
20	*02:06	*35:01	*15:01	0.427%	0.369%	0.048	58.672%
21	*02:06	*40:06	*09:01	0.416%	0.355%	0.079	59.265%
22	*02:06	*39:01	*15:01	0.398%	0.374%	0.110	59.884%
22	*24:02	*52:01	*09:01	0.398%	-0.187%	-0.017	60.413%
24	*24:02	*40:02	*09:01	0.392%	-0.024%	-0.003	61.198%
25	*31:01	*51:01	*14:03	0.381%	0.368%	0.232	61.788%
26	*02:07	*46:01	*09:01	0.375%	0.351%	0.101	62.258%
27	*02:01	*54:01	*04:05	0.364%	0.244%	0.033	62.802%
28	*11:01	*67:01	*16:02	0.352%	0.351%	0.360	63.275%
29	*24:02	*40:01	*04:05	0.346%	0.084%	0.016	63.999%
29	*26:03	*15:01	*15:01	0.346%	0.333%	0.148	64.554%
31	*26:01	*35:01	*04:10	0.335%	0.322%	0.154	65.063%
32	*33:03	*58:01	*13:02	0.329%	0.327%	0.536	65.480%
33	*31:01	*51:01	*09:01	0.323%	0.205%	0.023	66.096%
34	*24:02	*15:18	*04:01	0.312%	0.307%	0.345	66.524%
34	*26:03	*15:01	*09:01	0.312%	0.286%	0.128	66.918%
36	*26:02	*15:01	*14:06	0.306%	0.304%	0.239	67.307%
37	*02:01	*15:11	*09:01	0.300%	0.284%	0.294	67.688%
37	*24:02	*35:01	*09:01	0.300%	-0.120%	-0.016	68.269%
37	*24:02	*51:01	*14:03	0.300%	0.247%	0.160	68.676%
40	*02:01	*07:02	*01:01	0.294%	0.256%	0.045	69.112%
40	*02:01	*40:06	*09:01	0.294%	0.219%	0.049	69.429%
40	*24:02	*15:01	*04:06	0.294%	0.205%	0.066	69.913%
40	*24:02	*40:02	*15:01	0.294%	0.069%	0.009	70.568%
40	*31:01	*51:01	*04:05	0.294%	0.182%	0.021	71.099%
45	*02:06	*59:01	*04:05	0.283%	0.259%	0.138	71.382%
46	*02:06	*54:01	*04:05	0.277%	0.182%	0.024	71.629%
47	*01:01	*37:01	*10:01	0.266%	0.266%	0.568	71.949%
47	*24:02	*44:03	*13:02	0.266%	0.141%	0.026	72.311%
49	*24:02	*15:07	*04:03	0.260%	0.254%	0.435	72.609%
49	*24:02	*35:01	*15:01	0.260%	0.033%	0.004	73.118%
51	*02:01	*40:02	*09:01	0.248%	0.114%	0.014	73.488%

51	*02:01	*51:01	*15:01	0.248%	0.164%	0.021	73.968%
51	*11:01	*54:01	*08:03	0.248%	0.190%	0.025	74.274%
51	*24:02	*40:02	*04:05	0.248%	-0.147%	-0.019	74.732%
51	*24:02	*51:01	*04:05	0.248%	-0.209%	-0.024	75.115%
56	*02:06	*35:01	*09:01	0.242%	0.134%	0.017	75.470%
56	*11:01	*35:01	*04:05	0.242%	0.143%	0.018	75.847%
56	*24:02	*51:01	*15:01	0.242%	-0.018%	-0.002	76.149%
59	*11:01	*55:02	*04:05	0.237%	0.207%	0.085	76.418%
59	*31:01	*52:01	*15:02	0.237%	0.130%	0.015	76.745%
61	*03:01	*44:02	*13:01	0.231%	0.231%	0.606	77.007%
62	*02:01	*54:01	*08:03	0.225%	0.149%	0.020	77.270%
62	*02:06	*51:01	*09:01	0.225%	0.101%	0.011	77.507%
62	*02:10	*40:06	*04:05	0.225%	0.223%	0.547	77.725%
62	*24:02	*15:01	*09:01	0.225%	-0.177%	-0.024	78.009%
62	*24:02	*35:01	*04:05	0.225%	-0.174%	-0.023	78.288%
62	*26:01	*54:01	*04:05	0.225%	0.146%	0.020	78.421%
68	*02:01	*46:01	*08:03	0.219%	0.171%	0.035	78.698%
68	*02:06	*39:01	*08:02	0.219%	0.206%	0.060	78.941%
68	*24:02	*40:02	*14:54	0.219%	0.119%	0.035	79.271%
68	*24:02	*48:01	*15:01	0.219%	0.140%	0.051	79.514%
68	*26:01	*40:06	*09:01	0.219%	0.169%	0.038	79.639%
73	*02:06	*35:01	*04:03	0.214%	0.193%	0.070	79.899%
73	*02:06	*48:01	*04:07	0.214%	0.212%	0.429	80.116%
73	*24:02	*13:01	*12:02	0.214%	0.206%	0.170	80.345%
73	*31:01	*56:01	*09:01	0.214%	0.202%	0.223	80.538%
77	*02:01	*35:01	*04:10	0.208%	0.188%	0.090	80.768%
77	*24:02	*40:02	*08:02	0.208%	0.084%	0.020	81.001%
77	*26:01	*07:02	*01:01	0.208%	0.183%	0.032	81.192%
80	*02:06	*07:02	*01:01	0.202%	0.171%	0.030	81.344%
80	*11:01	*67:01	*15:01	0.202%	0.194%	0.170	81.539%
80	*26:01	*52:01	*15:02	0.202%	0.110%	0.015	81.744%
83	*02:01	*40:01	*04:05	0.196%	0.112%	0.021	82.016%
83	*02:01	*40:01	*09:01	0.196%	0.107%	0.020	82.229%
83	*02:01	*51:01	*09:01	0.196%	0.041%	0.004	82.385%
83	*02:06	*15:01	*15:01	0.196%	0.140%	0.018	82.633%
83	*24:02	*35:01	*04:03	0.196%	0.115%	0.043	82.865%
83	*24:02	*40:01	*11:01	0.196%	0.142%	0.052	83.099%
83	*31:01	*40:02	*04:10	0.196%	0.181%	0.087	83.307%
83	*31:01	*40:02	*14:54	0.196%	0.171%	0.050	83.515%
83	*31:01	*54:01	*04:05	0.196%	0.105%	0.014	83.583%
92	*02:06	*52:01	*15:02	0.190%	0.079%	0.009	83.742%
92	*24:02	*40:01	*15:01	0.190%	0.041%	0.008	83.913%
92	*24:02	*52:01	*04:05	0.190%	-0.365%	-0.034	84.033%
92	*31:01	*51:01	*14:54	0.190%	0.162%	0.047	84.207%
96	*24:02	*51:01	*11:01	0.185%	0.091%	0.034	84.397%
96	*24:02	*54:01	*08:03	0.185%	-0.050%	-0.007	84.552%
96	*31:01	*40:02	*08:02	0.185%	0.154%	0.036	84.687%
99	*02:01	*35:01	*09:01	0.179%	0.044%	0.005	84.873%
99	*24:02	*40:06	*12:01	0.179%	0.119%	0.033	85.060%
99	*24:02	*51:01	*12:01	0.179%	0.057%	0.016	85.262%
99	*26:01	*40:02	*14:54	0.179%	0.158%	0.046	85.391%
103	*02:01	*51:01	*14:03	0.173%	0.156%	0.099	85.506%
103	*02:06	*46:01	*08:03	0.173%	0.134%	0.028	85.641%
103	*11:01	*51:01	*04:05	0.173%	0.059%	0.007	85.771%

103	*24:02	*35:01	*08:02	0.173%	0.048%	0.011	85.949%
103	*24:02	*55:02	*04:05	0.173%	0.052%	0.022	86.076%
103	*26:01	*15:01	*04:06	0.173%	0.154%	0.049	86.219%
103	*26:01	*35:01	*15:01	0.173%	0.125%	0.016	86.400%
103	*31:01	*15:01	*15:01	0.173%	0.120%	0.016	86.586%
111	*02:01	*52:01	*15:02	0.167%	0.027%	0.003	86.711%
111	*11:01	*15:01	*09:01	0.167%	0.067%	0.009	86.883%
111	*24:02	*40:02	*14:05	0.167%	0.110%	0.057	87.010%
111	*26:01	*35:01	*08:02	0.167%	0.141%	0.033	87.129%
111	*30:01	*13:02	*07:01	0.167%	0.167%	0.806	87.283%
111	*31:01	*07:02	*01:01	0.167%	0.138%	0.024	87.369%
117	*02:01	*15:01	*09:01	0.162%	0.032%	0.004	87.479%
117	*24:02	*35:01	*12:01	0.162%	0.055%	0.016	87.626%
117	*24:02	*40:01	*12:01	0.162%	0.092%	0.026	87.748%
117	*24:02	*54:01	*01:01	0.162%	0.003%	0.001	87.850%
117	*31:01	*35:01	*09:01	0.162%	0.058%	0.007	87.961%
117	*31:01	*40:01	*08:03	0.162%	0.121%	0.023	88.145%
117	*33:03	*44:03	*09:01	0.162%	0.099%	0.016	88.308%
124	*02:01	*48:01	*14:54	0.156%	0.145%	0.052	88.456%
124	*02:06	*40:02	*09:01	0.156%	0.049%	0.006	88.547%
124	*11:01	*46:01	*08:03	0.156%	0.118%	0.024	88.625%
124	*24:02	*40:01	*14:54	0.156%	0.089%	0.026	88.731%
124	*31:01	*40:02	*04:05	0.156%	0.059%	0.007	88.856%
129	*02:01	*35:01	*12:01	0.150%	0.116%	0.032	89.008%
129	*02:01	*35:01	*15:01	0.150%	0.077%	0.010	89.114%
129	*24:02	*39:01	*08:03	0.150%	0.043%	0.013	89.275%
129	*24:02	*40:02	*11:01	0.150%	0.069%	0.025	89.370%
129	*24:02	*46:01	*09:01	0.150%	-0.102%	-0.022	89.441%
129	*24:02	*51:01	*08:02	0.150%	0.006%	0.002	89.527%
129	*31:01	*40:02	*11:01	0.150%	0.130%	0.047	89.621%
136	*02:06	*39:01	*08:03	0.144%	0.117%	0.034	89.716%
136	*02:06	*51:01	*12:01	0.144%	0.113%	0.031	89.833%
136	*11:01	*40:01	*08:03	0.144%	0.103%	0.019	89.940%
136	*31:01	*40:02	*09:01	0.144%	0.042%	0.005	89.979%
136	*31:01	*51:01	*14:05	0.144%	0.128%	0.065	90.074%
141	*02:01	*35:01	*08:02	0.139%	0.098%	0.023	90.154%
141	*02:01	*55:02	*04:05	0.139%	0.100%	0.041	90.251%
141	*02:06	*40:01	*04:05	0.139%	0.071%	0.013	90.346%
141	*11:01	*48:01	*09:01	0.139%	0.102%	0.037	90.455%
141	*11:01	*52:01	*15:02	0.139%	0.030%	0.003	90.508%
141	*24:02	*40:06	*04:05	0.139%	-0.085%	-0.020	90.575%
141	*24:02	*54:01	*13:01	0.139%	0.123%	0.219	90.648%
141	*31:01	*51:01	*11:01	0.139%	0.115%	0.042	90.714%
149	*02:01	*54:01	*15:01	0.133%	0.065%	0.009	90.802%
149	*02:06	*35:01	*04:05	0.133%	0.030%	0.004	90.885%
149	*24:02	*15:01	*15:01	0.133%	-0.085%	-0.011	90.983%
149	*24:02	*52:01	*15:01	0.133%	-0.184%	-0.025	91.034%
149	*26:01	*40:02	*04:05	0.133%	0.049%	0.006	91.120%
149	*31:01	*35:01	*04:03	0.133%	0.113%	0.041	91.201%
149	*31:01	*51:01	*15:01	0.133%	0.069%	0.009	91.259%
156	*02:06	*40:02	*08:02	0.127%	0.095%	0.022	91.326%
156	*02:06	*40:02	*15:01	0.127%	0.069%	0.009	91.399%
156	*11:01	*56:03	*12:01	0.127%	0.126%	0.563	91.488%
156	*24:02	*35:01	*14:54	0.127%	0.025%	0.008	91.568%

156	*24:02	*48:01	*04:05	0.127%	-0.012%	-0.004	91.635%
156	*24:02	*52:01	*08:03	0.127%	-0.225%	-0.027	91.701%
156	*24:02	*54:01	*09:01	0.127%	-0.264%	-0.037	91.772%
156	*26:01	*35:01	*04:03	0.127%	0.110%	0.040	91.836%
156	*33:03	*44:03	*04:05	0.127%	0.068%	0.011	91.940%
165	*02:01	*39:01	*15:01	0.121%	0.090%	0.027	92.028%
165	*02:06	*15:01	*09:01	0.121%	0.018%	0.002	92.080%
165	*24:02	*07:02	*09:01	0.121%	-0.173%	-0.032	92.131%
165	*24:02	*40:02	*04:10	0.121%	0.060%	0.029	92.190%
165	*26:01	*35:01	*14:54	0.121%	0.100%	0.029	92.251%
165	*31:01	*40:06	*09:01	0.121%	0.063%	0.014	92.283%
171	*02:01	*40:02	*15:01	0.115%	0.043%	0.006	92.351%
171	*02:01	*51:01	*14:54	0.115%	0.078%	0.023	92.434%
171	*02:06	*35:01	*11:01	0.115%	0.094%	0.034	92.501%
171	*11:01	*07:02	*01:01	0.115%	0.086%	0.015	92.537%
171	*24:02	*07:02	*04:05	0.115%	-0.163%	-0.030	92.574%
171	*24:02	*15:01	*14:06	0.115%	0.080%	0.064	92.664%
171	*24:02	*40:01	*08:03	0.115%	-0.051%	-0.010	92.724%
171	*24:02	*40:01	*14:05	0.115%	0.077%	0.040	92.773%
171	*26:01	*40:01	*12:01	0.115%	0.101%	0.028	92.853%
171	*26:03	*35:01	*04:03	0.115%	0.110%	0.049	92.892%
181	*02:01	*35:01	*04:03	0.110%	0.083%	0.030	92.920%
181	*02:01	*38:02	*08:03	0.110%	0.107%	0.390	92.983%
181	*02:01	*40:01	*08:03	0.110%	0.056%	0.011	93.039%
181	*02:06	*51:01	*04:05	0.110%	-0.008%	-0.001	93.088%
181	*11:01	*15:01	*04:05	0.110%	0.015%	0.002	93.161%
181	*11:01	*15:01	*15:01	0.110%	0.056%	0.007	93.210%
181	*11:01	*39:01	*04:05	0.110%	0.068%	0.020	93.255%
181	*33:03	*44:03	*15:01	0.110%	0.076%	0.012	93.327%
189	*02:01	*39:01	*08:03	0.104%	0.070%	0.020	93.376%
189	*02:01	*40:01	*15:01	0.104%	0.056%	0.010	93.419%
189	*24:02	*40:02	*08:03	0.104%	-0.146%	-0.019	93.462%
189	*24:02	*40:02	*12:01	0.104%	-0.002%	0.000	93.496%
189	*24:02	*51:01	*14:54	0.104%	-0.013%	-0.004	93.539%
189	*26:01	*39:01	*08:03	0.104%	0.081%	0.024	93.576%
189	*26:01	*40:01	*15:01	0.104%	0.072%	0.014	93.626%
189	*31:01	*13:01	*12:02	0.104%	0.102%	0.084	93.682%
189	*31:01	*15:01	*04:06	0.104%	0.082%	0.026	93.735%
198	*02:01	*15:01	*11:01	0.098%	0.073%	0.026	93.809%
198	*02:01	*15:01	*15:01	0.098%	0.028%	0.004	93.838%
198	*02:01	*15:18	*04:01	0.098%	0.097%	0.108	93.896%
198	*02:01	*35:01	*14:54	0.098%	0.065%	0.019	93.928%
198	*02:01	*40:02	*08:02	0.098%	0.058%	0.014	93.963%
198	*02:06	*48:01	*09:01	0.098%	0.061%	0.022	94.018%
198	*24:02	*35:01	*04:10	0.098%	0.037%	0.018	94.055%
198	*24:02	*48:01	*09:01	0.098%	-0.048%	-0.018	94.093%
198	*24:02	*55:02	*15:01	0.098%	0.029%	0.012	94.138%
198	*24:02	*67:01	*16:02	0.098%	0.094%	0.097	94.191%
198	*26:01	*35:01	*09:01	0.098%	0.009%	0.001	94.219%
198	*26:01	*46:01	*08:03	0.098%	0.066%	0.014	94.255%
198	*31:01	*46:01	*08:03	0.098%	0.061%	0.013	94.280%
198	*31:01	*48:01	*09:01	0.098%	0.062%	0.022	94.309%
212	*02:01	*15:01	*04:06	0.092%	0.064%	0.020	94.348%
212	*02:01	*40:02	*04:05	0.092%	-0.035%	-0.004	94.388%

212	*02:01	*46:01	*09:01	0.092%	0.011%	0.002	94.413%
212	*02:07	*46:01	*04:05	0.092%	0.069%	0.020	94.462%
212	*24:02	*51:01	*04:04	0.092%	0.083%	0.325	94.491%
212	*24:02	*54:01	*04:06	0.092%	0.005%	0.002	94.528%
212	*24:02	*55:02	*09:01	0.092%	-0.035%	-0.015	94.565%
212	*26:01	*40:02	*15:01	0.092%	0.045%	0.006	94.593%
212	*31:01	*39:01	*15:01	0.092%	0.069%	0.020	94.627%
212	*33:03	*52:01	*15:02	0.092%	0.008%	0.001	94.646%
222	*02:01	*40:01	*12:01	0.087%	0.064%	0.018	94.684%
222	*02:01	*40:02	*14:54	0.087%	0.054%	0.016	94.711%
222	*02:01	*51:01	*04:03	0.087%	0.057%	0.021	94.760%
222	*02:01	*51:01	*08:02	0.087%	0.040%	0.009	94.790%
222	*02:06	*15:01	*04:06	0.087%	0.064%	0.020	94.813%
222	*02:06	*40:01	*09:01	0.087%	0.015%	0.003	94.843%
222	*03:02	*13:02	*07:01	0.087%	0.087%	0.883	94.899%
222	*26:02	*15:01	*15:01	0.087%	0.075%	0.041	94.916%
222	*26:03	*15:01	*14:06	0.087%	0.084%	0.066	94.954%
222	*26:03	*35:01	*15:01	0.087%	0.072%	0.032	94.979%
222	*33:03	*44:03	*07:01	0.087%	0.085%	0.197	95.014%
233	*02:01	*15:01	*14:06	0.081%	0.069%	0.055	95.047%
233	*02:01	*35:01	*04:05	0.081%	-0.048%	-0.006	95.074%
233	*02:01	*40:01	*14:05	0.081%	0.069%	0.035	95.104%
233	*02:01	*40:02	*11:01	0.081%	0.055%	0.020	95.134%
233	*02:01	*40:02	*14:05	0.081%	0.062%	0.032	95.162%
233	*02:01	*44:03	*13:02	0.081%	0.041%	0.007	95.212%
233	*02:01	*51:01	*04:05	0.081%	-0.067%	-0.007	95.229%
233	*02:01	*67:01	*12:01	0.081%	0.076%	0.066	95.266%
233	*02:06	*48:01	*15:01	0.081%	0.061%	0.022	95.302%
233	*11:01	*13:01	*12:02	0.081%	0.079%	0.065	95.336%
233	*24:02	*15:01	*08:03	0.081%	-0.161%	-0.021	95.387%
233	*24:02	*35:01	*11:01	0.081%	-0.001%	0.000	95.415%
233	*24:02	*37:01	*10:01	0.081%	0.080%	0.139	95.467%
233	*24:02	*54:01	*14:05	0.081%	0.027%	0.014	95.506%
233	*24:20	*35:01	*11:01	0.081%	0.079%	0.117	95.533%
233	*26:01	*51:01	*15:01	0.081%	0.026%	0.003	95.563%
233	*26:01	*59:01	*04:05	0.081%	0.061%	0.032	95.592%
233	*26:03	*35:01	*08:02	0.081%	0.073%	0.032	95.617%
233	*31:01	*15:01	*09:01	0.081%	-0.018%	-0.002	95.639%
233	*31:01	*35:01	*15:01	0.081%	0.025%	0.003	95.657%
233	*31:01	*39:02	*09:01	0.081%	0.077%	0.283	95.680%
233	*31:01	*44:03	*13:02	0.081%	0.050%	0.009	95.717%
233	*31:01	*51:01	*08:03	0.081%	0.010%	0.001	95.754%
233	*33:03	*44:03	*14:54	0.081%	0.066%	0.019	95.790%
233	*33:03	*58:01	*03:01	0.081%	0.081%	0.667	95.837%
258	*02:01	*39:01	*09:01	0.075%	0.018%	0.005	95.865%
258	*02:01	*40:01	*14:54	0.075%	0.053%	0.015	95.882%
258	*02:01	*59:01	*04:05	0.075%	0.045%	0.024	95.898%
258	*02:06	*51:01	*14:03	0.075%	0.061%	0.039	95.925%
258	*24:02	*15:01	*04:05	0.075%	-0.306%	-0.042	95.952%
258	*24:02	*39:01	*09:01	0.075%	-0.103%	-0.032	95.970%
258	*24:02	*48:01	*14:54	0.075%	0.040%	0.014	95.997%
258	*24:02	*51:01	*08:03	0.075%	-0.214%	-0.026	96.022%
258	*26:01	*35:01	*12:01	0.075%	0.053%	0.015	96.045%
258	*31:01	*35:01	*04:05	0.075%	-0.023%	-0.003	96.064%



258	*31:01	*35:01	*04:10	0.075%	0.060%	0.029	96.081%
258	*31:01	*40:01	*09:01	0.075%	0.007%	0.001	96.102%
270	*02:01	*39:04	*09:01	0.069%	0.066%	0.322	96.116%
270	*02:01	*51:01	*12:01	0.069%	0.030%	0.008	96.136%
270	*02:06	*35:01	*12:01	0.069%	0.042%	0.012	96.159%
270	*02:06	*39:01	*04:05	0.069%	0.026%	0.008	96.184%
270	*02:06	*51:01	*08:03	0.069%	-0.005%	-0.001	96.212%
270	*02:06	*55:02	*09:01	0.069%	0.036%	0.015	96.238%
270	*11:01	*40:01	*04:05	0.069%	0.004%	0.001	96.256%
270	*11:01	*48:01	*15:01	0.069%	0.050%	0.018	96.278%
270	*11:01	*51:01	*15:01	0.069%	0.004%	0.001	96.301%
270	*24:02	*48:01	*16:02	0.069%	0.059%	0.061	96.326%
270	*24:02	*51:01	*14:05	0.069%	0.003%	0.001	96.345%
270	*24:02	*52:01	*11:01	0.069%	-0.045%	-0.017	96.365%
270	*26:01	*51:01	*09:01	0.069%	-0.033%	-0.004	96.392%
270	*26:01	*51:01	*14:03	0.069%	0.058%	0.036	96.411%
270	*26:03	*15:01	*04:05	0.069%	0.045%	0.020	96.437%
270	*26:03	*52:01	*15:02	0.069%	0.042%	0.019	96.446%
270	*31:01	*51:01	*12:01	0.069%	0.039%	0.011	96.461%
287	*02:01	*51:01	*08:03	0.063%	-0.030%	-0.003	96.472%
287	*02:06	*40:02	*04:10	0.063%	0.048%	0.023	96.495%
287	*02:06	*40:02	*14:54	0.063%	0.038%	0.011	96.510%
287	*02:06	*40:06	*04:05	0.063%	0.006%	0.001	96.532%
287	*11:01	*51:01	*11:01	0.063%	0.040%	0.014	96.557%
287	*11:01	*55:02	*09:01	0.063%	0.032%	0.013	96.584%
287	*24:02	*51:01	*04:03	0.063%	-0.030%	-0.011	96.606%
287	*24:02	*52:01	*01:01	0.063%	-0.174%	-0.031	96.625%
287	*24:02	*54:01	*12:01	0.063%	-0.035%	-0.010	96.648%
287	*24:20	*55:02	*04:05	0.063%	0.061%	0.090	96.665%
287	*26:01	*54:01	*14:05	0.063%	0.052%	0.026	96.692%
298	*02:01	*15:01	*12:02	0.058%	0.041%	0.023	96.716%
298	*02:01	*55:02	*09:01	0.058%	0.017%	0.007	96.729%
298	*02:06	*48:01	*14:05	0.058%	0.053%	0.027	96.758%
298	*02:06	*51:01	*15:01	0.058%	-0.009%	-0.001	96.767%
298	*02:06	*54:01	*15:01	0.058%	0.003%	0.000	96.783%
298	*02:07	*44:03	*13:02	0.058%	0.046%	0.013	96.801%
298	*11:01	*15:01	*04:03	0.058%	0.038%	0.014	96.830%
298	*11:01	*40:06	*09:01	0.058%	-0.001%	0.000	96.843%
298	*11:01	*51:01	*09:01	0.058%	-0.062%	-0.007	96.860%
298	*24:02	*07:02	*15:01	0.058%	-0.101%	-0.018	96.875%
298	*24:02	*39:01	*15:01	0.058%	-0.039%	-0.012	96.890%
298	*24:02	*51:01	*15:02	0.058%	-0.300%	-0.034	96.905%
298	*24:02	*52:01	*04:03	0.058%	-0.056%	-0.021	96.922%
298	*24:02	*54:01	*15:01	0.058%	-0.154%	-0.021	96.930%
298	*26:01	*15:01	*08:03	0.058%	0.007%	0.001	96.959%
298	*26:01	*15:01	*09:01	0.058%	-0.028%	-0.004	96.970%
298	*26:01	*37:01	*10:01	0.058%	0.057%	0.100	96.996%
298	*26:01	*39:01	*15:01	0.058%	0.037%	0.011	97.006%
298	*26:01	*40:01	*08:03	0.058%	0.023%	0.004	97.020%
298	*26:01	*40:01	*09:01	0.058%	-0.001%	0.000	97.031%
298	*26:02	*40:06	*12:01	0.058%	0.055%	0.029	97.053%
298	*26:03	*15:01	*14:54	0.058%	0.052%	0.023	97.075%
298	*26:03	*51:01	*14:54	0.058%	0.050%	0.022	97.087%
298	*31:01	*35:01	*08:02	0.058%	0.027%	0.006	97.098%

298	*31:01	*39:01	*08:03	0.058%	0.031%	0.009	97.105%
298	*31:01	*40:01	*11:01	0.058%	0.044%	0.016	97.124%
298	*31:01	*40:02	*15:01	0.058%	0.002%	0.000	97.132%
298	*31:01	*51:01	*04:03	0.058%	0.035%	0.013	97.143%
298	*31:01	*51:01	*16:02	0.058%	0.050%	0.051	97.155%
298	*33:03	*44:03	*11:01	0.058%	0.046%	0.016	97.176%
298	*33:03	*44:03	*15:02	0.058%	0.011%	0.002	97.195%
298	*33:03	*54:01	*04:05	0.058%	-0.014%	-0.002	97.203%
330	*02:01	*15:01	*04:05	0.052%	-0.071%	-0.009	97.218%
330	*02:01	*15:18	*04:05	0.052%	0.029%	0.020	97.234%
330	*02:01	*35:01	*04:07	0.052%	0.047%	0.096	97.247%
330	*02:01	*39:04	*04:03	0.052%	0.051%	0.248	97.264%
330	*02:01	*40:01	*11:01	0.052%	0.035%	0.012	97.275%
330	*02:01	*48:01	*09:01	0.052%	0.005%	0.002	97.283%
330	*02:01	*56:01	*09:01	0.052%	0.037%	0.041	97.295%
330	*02:06	*13:01	*12:02	0.052%	0.050%	0.041	97.310%
330	*02:06	*15:18	*04:01	0.052%	0.051%	0.057	97.329%
330	*02:06	*39:01	*09:01	0.052%	0.006%	0.002	97.339%
330	*02:06	*39:01	*14:54	0.052%	0.041%	0.012	97.356%
330	*02:06	*40:02	*12:01	0.052%	0.025%	0.007	97.374%
330	*02:06	*55:02	*04:05	0.052%	0.021%	0.009	97.385%
330	*02:06	*55:02	*08:02	0.052%	0.042%	0.017	97.407%
330	*02:07	*15:01	*04:06	0.052%	0.043%	0.014	97.414%
330	*02:07	*15:01	*15:01	0.052%	0.031%	0.009	97.420%
330	*11:01	*15:01	*08:03	0.052%	-0.008%	-0.001	97.435%
330	*11:01	*39:01	*15:01	0.052%	0.028%	0.008	97.441%
330	*11:01	*40:01	*09:01	0.052%	-0.017%	-0.003	97.450%
330	*11:01	*48:01	*14:05	0.052%	0.047%	0.024	97.468%
330	*11:01	*54:01	*09:01	0.052%	-0.045%	-0.006	97.484%
330	*24:02	*07:02	*08:02	0.052%	-0.036%	-0.009	97.500%
330	*24:02	*15:01	*04:03	0.052%	-0.026%	-0.010	97.522%
330	*24:02	*15:01	*12:02	0.052%	0.001%	0.001	97.537%
330	*24:02	*15:11	*04:05	0.052%	0.004%	0.004	97.548%
330	*24:02	*15:18	*04:10	0.052%	0.041%	0.029	97.566%
330	*24:02	*40:03	*12:01	0.052%	0.048%	0.141	97.581%
330	*24:02	*40:06	*15:01	0.052%	-0.075%	-0.017	97.593%
330	*24:02	*56:01	*09:01	0.052%	0.004%	0.005	97.602%
330	*26:01	*35:01	*04:05	0.052%	-0.033%	-0.004	97.609%
330	*26:01	*40:01	*04:05	0.052%	-0.004%	-0.001	97.620%
330	*26:01	*40:02	*04:03	0.052%	0.035%	0.013	97.640%
330	*26:01	*40:02	*04:10	0.052%	0.039%	0.019	97.650%
330	*26:02	*07:02	*01:01	0.052%	0.046%	0.025	97.657%
330	*26:02	*52:01	*15:02	0.052%	0.030%	0.016	97.661%
330	*31:01	*15:11	*09:01	0.052%	0.039%	0.041	97.670%
330	*31:01	*40:02	*04:06	0.052%	0.029%	0.009	97.685%
367	*02:01	*15:01	*08:03	0.046%	-0.032%	-0.004	97.696%
367	*02:01	*15:11	*04:05	0.046%	0.031%	0.032	97.705%
367	*02:01	*40:02	*08:03	0.046%	-0.035%	-0.004	97.716%
367	*02:01	*55:02	*12:01	0.046%	0.036%	0.015	97.735%
367	*02:06	*15:11	*12:01	0.046%	0.043%	0.044	97.750%
367	*02:06	*40:01	*08:03	0.046%	0.003%	0.001	97.758%
367	*02:06	*51:01	*14:05	0.046%	0.029%	0.015	97.769%
367	*02:07	*46:01	*12:01	0.046%	0.040%	0.011	97.787%
367	*02:10	*40:06	*09:01	0.046%	0.044%	0.107	97.792%

367	*02:10	*40:06	*12:01	0.046%	0.046%	0.111	97.804%
367	*11:01	*35:01	*12:01	0.046%	0.020%	0.005	97.815%
367	*11:01	*51:01	*08:02	0.046%	0.010%	0.002	97.828%
367	*11:01	*54:01	*14:05	0.046%	0.033%	0.017	97.839%
367	*11:01	*59:01	*04:05	0.046%	0.023%	0.012	97.845%
367	*24:02	*07:02	*08:03	0.046%	-0.130%	-0.024	97.855%
367	*24:02	*39:01	*08:02	0.046%	-0.007%	-0.002	97.873%
367	*24:02	*40:01	*08:02	0.046%	-0.036%	-0.009	97.885%
367	*24:02	*40:02	*04:06	0.046%	-0.047%	-0.015	97.896%
367	*24:02	*46:01	*04:05	0.046%	-0.193%	-0.042	97.903%
367	*24:02	*51:01	*04:10	0.046%	-0.025%	-0.012	97.913%
367	*24:02	*52:01	*12:02	0.046%	-0.028%	-0.016	97.922%
367	*24:02	*55:02	*08:02	0.046%	0.008%	0.003	97.935%
367	*24:02	*58:01	*13:02	0.046%	0.034%	0.057	97.950%
367	*24:20	*35:01	*04:05	0.046%	0.039%	0.057	97.955%
367	*26:01	*15:07	*04:03	0.046%	0.045%	0.076	97.970%
367	*26:01	*35:01	*11:01	0.046%	0.029%	0.010	97.979%
367	*26:01	*39:01	*08:02	0.046%	0.035%	0.010	97.991%
367	*26:01	*40:01	*11:01	0.046%	0.035%	0.012	98.000%
367	*26:01	*40:02	*11:01	0.046%	0.029%	0.010	98.007%
367	*26:01	*40:06	*04:05	0.046%	-0.001%	0.000	98.017%
367	*26:01	*48:01	*15:01	0.046%	0.029%	0.011	98.026%
367	*26:01	*56:01	*09:01	0.046%	0.036%	0.040	98.034%
367	*26:02	*15:01	*09:01	0.046%	0.026%	0.014	98.039%
367	*26:03	*51:01	*14:03	0.046%	0.043%	0.027	98.046%
367	*31:01	*51:01	*12:02	0.046%	0.031%	0.017	98.054%
367	*31:01	*51:02	*09:01	0.046%	0.044%	0.226	98.061%
367	*31:01	*59:01	*04:05	0.046%	0.023%	0.012	98.065%
367	*33:03	*07:02	*01:01	0.046%	0.023%	0.004	98.071%
367	*33:03	*44:03	*12:01	0.046%	0.030%	0.008	98.084%
367	*33:03	*44:03	*14:05	0.046%	0.038%	0.019	98.094%
407	*02:01	*15:01	*08:02	0.040%	0.002%	0.000	98.105%
407	*02:01	*15:18	*08:03	0.040%	0.026%	0.018	98.116%
407	*02:01	*35:01	*08:03	0.040%	-0.041%	-0.005	98.125%
407	*02:01	*39:01	*04:10	0.040%	0.032%	0.015	98.137%
407	*02:01	*40:02	*15:02	0.040%	-0.059%	-0.007	98.147%
407	*02:01	*48:01	*12:01	0.040%	0.029%	0.010	98.159%
407	*02:01	*55:02	*15:01	0.040%	0.018%	0.007	98.169%
407	*02:01	*55:04	*09:01	0.040%	0.038%	0.293	98.174%
407	*02:06	*15:01	*14:06	0.040%	0.031%	0.025	98.186%
407	*02:06	*35:01	*14:54	0.040%	0.014%	0.004	98.195%
407	*02:06	*40:06	*12:01	0.040%	0.025%	0.007	98.205%
407	*02:06	*40:06	*14:54	0.040%	0.026%	0.007	98.218%
407	*02:06	*44:03	*13:02	0.040%	0.008%	0.002	98.229%
407	*02:06	*48:01	*04:05	0.040%	0.005%	0.002	98.238%
407	*02:06	*51:01	*16:02	0.040%	0.032%	0.033	98.247%
407	*02:07	*07:02	*01:01	0.040%	0.029%	0.008	98.250%
407	*02:07	*52:01	*15:02	0.040%	-0.002%	0.000	98.252%
407	*02:18	*46:01	*08:03	0.040%	0.040%	0.874	98.255%
407	*11:01	*15:18	*09:01	0.040%	0.022%	0.015	98.266%
407	*11:01	*35:01	*09:01	0.040%	-0.064%	-0.008	98.273%
407	*11:01	*35:01	*15:01	0.040%	-0.016%	-0.002	98.278%
407	*11:01	*40:01	*14:54	0.040%	0.024%	0.007	98.289%
407	*11:01	*40:02	*08:02	0.040%	0.010%	0.002	98.296%

407	*11:01	*44:02	*13:01	0.040%	0.040%	0.106	98.311%
407	*11:01	*52:01	*09:01	0.040%	-0.105%	-0.012	98.316%
407	*24:02	*07:02	*12:01	0.040%	-0.034%	-0.010	98.323%
407	*24:02	*07:02	*15:02	0.040%	-0.178%	-0.033	98.331%
407	*24:02	*35:01	*08:03	0.040%	-0.212%	-0.027	98.340%
407	*24:02	*35:01	*14:06	0.040%	0.003%	0.003	98.350%
407	*24:02	*40:01	*01:01	0.040%	-0.072%	-0.014	98.358%
407	*24:02	*40:01	*04:03	0.040%	-0.013%	-0.005	98.366%
407	*24:02	*40:02	*04:03	0.040%	-0.040%	-0.015	98.373%
407	*24:02	*40:06	*11:01	0.040%	-0.006%	-0.002	98.383%
407	*24:02	*40:06	*14:54	0.040%	-0.017%	-0.005	98.392%
407	*24:02	*52:01	*08:02	0.040%	-0.134%	-0.033	98.399%
407	*24:02	*52:01	*12:01	0.040%	-0.108%	-0.031	98.404%
407	*24:20	*40:01	*08:03	0.040%	0.037%	0.055	98.409%
407	*26:01	*15:01	*15:01	0.040%	-0.006%	-0.001	98.411%
407	*26:01	*35:01	*04:06	0.040%	0.021%	0.006	98.419%
407	*26:01	*40:02	*12:01	0.040%	0.018%	0.005	98.426%
407	*26:01	*48:01	*14:07	0.040%	0.040%	0.436	98.437%
407	*26:01	*51:01	*04:05	0.040%	-0.057%	-0.007	98.442%
407	*26:01	*56:01	*11:01	0.040%	0.038%	0.042	98.454%
407	*26:03	*54:01	*04:05	0.040%	0.017%	0.008	98.457%
407	*31:01	*15:01	*08:03	0.040%	-0.019%	-0.002	98.466%
407	*31:01	*35:01	*12:01	0.040%	0.014%	0.004	98.471%
407	*31:01	*40:01	*04:05	0.040%	-0.024%	-0.005	98.477%
407	*31:01	*40:01	*14:54	0.040%	0.024%	0.007	98.483%
455	*02:01	*13:01	*04:05	0.035%	0.015%	0.013	98.489%
455	*02:01	*35:01	*11:01	0.035%	0.008%	0.003	98.493%
455	*02:01	*39:02	*14:54	0.035%	0.034%	0.121	98.500%
455	*02:01	*40:03	*14:05	0.035%	0.034%	0.099	98.512%
455	*02:01	*40:06	*15:01	0.035%	-0.006%	-0.001	98.520%
455	*02:01	*48:01	*11:01	0.035%	0.026%	0.009	98.527%
455	*02:01	*54:01	*12:01	0.035%	0.003%	0.001	98.533%
455	*02:01	*59:01	*09:01	0.035%	0.003%	0.001	98.537%
455	*02:01	*67:01	*16:02	0.035%	0.033%	0.034	98.545%
455	*02:06	*15:01	*08:03	0.035%	-0.028%	-0.004	98.551%
455	*02:06	*15:11	*09:01	0.035%	0.022%	0.022	98.555%
455	*02:06	*15:18	*04:05	0.035%	0.016%	0.012	98.561%
455	*02:06	*15:18	*12:01	0.035%	0.030%	0.021	98.569%
455	*02:06	*39:02	*09:01	0.035%	0.031%	0.113	98.572%
455	*02:06	*40:01	*12:01	0.035%	0.017%	0.005	98.578%
455	*02:06	*40:01	*15:01	0.035%	-0.004%	-0.001	98.582%
455	*02:06	*40:06	*15:01	0.035%	0.002%	0.000	98.587%
455	*02:06	*48:01	*14:54	0.035%	0.026%	0.009	98.593%
455	*02:06	*51:01	*14:54	0.035%	0.005%	0.001	98.597%
455	*02:06	*55:02	*08:03	0.035%	0.015%	0.006	98.607%
455	*02:06	*55:02	*15:01	0.035%	0.017%	0.007	98.611%
455	*02:07	*15:01	*04:05	0.035%	-0.002%	-0.001	98.616%
455	*11:01	*15:11	*09:01	0.035%	0.022%	0.023	98.619%
455	*11:01	*40:01	*15:01	0.035%	-0.003%	0.000	98.623%
455	*11:01	*44:03	*13:02	0.035%	0.004%	0.001	98.629%
455	*11:01	*46:01	*09:01	0.035%	-0.028%	-0.006	98.633%
455	*11:01	*51:01	*12:01	0.035%	0.004%	0.001	98.638%
455	*11:01	*51:01	*14:03	0.035%	0.021%	0.013	98.641%
455	*24:02	*15:11	*09:01	0.035%	-0.016%	-0.017	98.644%

455	*24:02	*15:18	*04:03	0.035%	0.020%	0.014	98.653%
455	*24:02	*15:18	*08:03	0.035%	-0.010%	-0.007	98.658%
455	*24:02	*15:18	*09:01	0.035%	-0.040%	-0.029	98.662%
455	*24:02	*39:01	*04:05	0.035%	-0.134%	-0.041	98.666%
455	*24:02	*40:01	*04:06	0.035%	-0.027%	-0.009	98.672%
455	*24:02	*40:06	*04:10	0.035%	0.000%	0.000	98.679%
455	*24:02	*48:01	*11:01	0.035%	0.006%	0.002	98.686%
455	*24:02	*48:01	*12:01	0.035%	-0.002%	-0.001	98.692%
455	*24:02	*52:01	*04:06	0.035%	-0.096%	-0.031	98.696%
455	*24:02	*52:01	*14:54	0.035%	-0.107%	-0.032	98.700%
455	*24:02	*54:01	*04:03	0.035%	-0.041%	-0.015	98.705%
455	*24:02	*54:01	*08:02	0.035%	-0.082%	-0.020	98.712%
455	*24:02	*54:01	*14:03	0.035%	-0.009%	-0.006	98.718%
455	*24:02	*54:01	*15:02	0.035%	-0.256%	-0.035	98.724%
455	*24:02	*55:02	*14:54	0.035%	0.004%	0.002	98.732%
455	*24:02	*56:01	*04:05	0.035%	-0.011%	-0.012	98.736%
455	*24:20	*46:01	*08:03	0.035%	0.032%	0.047	98.739%
455	*26:01	*40:01	*14:05	0.035%	0.027%	0.013	98.746%
455	*26:01	*48:01	*09:01	0.035%	0.004%	0.001	98.749%
455	*26:01	*51:01	*08:02	0.035%	0.004%	0.001	98.753%
455	*26:01	*54:01	*09:01	0.035%	-0.048%	-0.006	98.757%
455	*26:02	*35:01	*15:01	0.035%	0.023%	0.012	98.760%
455	*26:03	*15:01	*08:02	0.035%	0.027%	0.012	98.767%
455	*26:03	*15:01	*12:01	0.035%	0.028%	0.012	98.773%
455	*26:03	*46:01	*08:03	0.035%	0.025%	0.011	98.776%
455	*31:01	*15:01	*04:05	0.035%	-0.059%	-0.008	98.782%
455	*31:01	*15:01	*08:02	0.035%	0.005%	0.001	98.790%
455	*31:01	*15:01	*11:01	0.035%	0.015%	0.006	98.796%
455	*31:01	*15:07	*04:05	0.035%	0.028%	0.047	98.801%
455	*31:01	*15:18	*09:01	0.035%	0.016%	0.011	98.805%
455	*31:01	*40:01	*14:05	0.035%	0.025%	0.013	98.810%
455	*31:01	*40:02	*08:03	0.035%	-0.027%	-0.003	98.816%
455	*31:01	*40:02	*14:05	0.035%	0.021%	0.010	98.821%
455	*31:01	*51:01	*04:01	0.035%	0.027%	0.031	98.826%
455	*31:01	*56:01	*04:05	0.035%	0.024%	0.026	98.831%
455	*33:03	*44:03	*08:02	0.035%	0.016%	0.004	98.837%
455	*33:03	*46:01	*08:03	0.035%	0.005%	0.001	98.838%
521	*02:01	*15:11	*01:01	0.029%	0.022%	0.023	98.846%
521	*02:01	*15:11	*15:01	0.029%	0.020%	0.021	98.850%
521	*02:01	*15:18	*08:02	0.029%	0.022%	0.015	98.855%
521	*02:01	*27:05	*01:01	0.029%	0.028%	0.353	98.863%
521	*02:01	*37:01	*10:01	0.029%	0.028%	0.050	98.871%
521	*02:01	*40:02	*04:03	0.029%	0.003%	0.001	98.875%
521	*02:01	*40:02	*04:10	0.029%	0.009%	0.004	98.877%
521	*02:01	*48:01	*15:01	0.029%	0.003%	0.001	98.880%
521	*02:01	*51:01	*04:06	0.029%	-0.006%	-0.002	98.887%
521	*02:01	*51:01	*12:02	0.029%	0.009%	0.005	98.891%
521	*02:01	*52:01	*09:01	0.029%	-0.160%	-0.014	98.892%
521	*02:01	*55:02	*11:01	0.029%	0.021%	0.008	98.898%
521	*02:01	*56:03	*12:01	0.029%	0.028%	0.124	98.902%
521	*02:06	*15:01	*04:03	0.029%	0.009%	0.003	98.909%
521	*02:06	*15:11	*04:03	0.029%	0.026%	0.027	98.915%
521	*02:06	*35:01	*08:02	0.029%	-0.003%	-0.001	98.919%
521	*02:06	*35:01	*08:03	0.029%	-0.036%	-0.004	98.923%

521	*02:06	*37:01	*10:01	0.029%	0.029%	0.050	98.929%
521	*02:06	*39:01	*04:03	0.029%	0.020%	0.007	98.935%
521	*02:06	*39:01	*14:06	0.029%	0.025%	0.020	98.941%
521	*02:06	*40:01	*14:54	0.029%	0.012%	0.003	98.943%
521	*02:06	*40:02	*04:05	0.029%	-0.073%	-0.009	98.946%
521	*02:06	*40:02	*11:01	0.029%	0.008%	0.003	98.950%
521	*02:06	*40:02	*14:05	0.029%	0.014%	0.007	98.953%
521	*02:06	*46:01	*09:01	0.029%	-0.036%	-0.007	98.955%
521	*02:06	*51:01	*08:02	0.029%	-0.008%	-0.002	98.957%
521	*02:06	*54:01	*08:03	0.029%	-0.032%	-0.004	98.960%
521	*02:06	*54:01	*11:01	0.029%	0.009%	0.003	98.965%
521	*02:06	*55:02	*14:54	0.029%	0.021%	0.009	98.968%
521	*02:07	*46:01	*15:01	0.029%	0.016%	0.005	98.975%
521	*03:01	*52:01	*15:02	0.029%	0.024%	0.060	98.976%
521	*11:01	*40:01	*11:01	0.029%	0.015%	0.006	98.979%
521	*11:01	*40:01	*12:02	0.029%	0.020%	0.011	98.985%
521	*11:01	*40:02	*04:05	0.029%	-0.070%	-0.009	98.989%
521	*11:01	*40:02	*09:01	0.029%	-0.075%	-0.009	98.992%
521	*11:01	*40:02	*11:01	0.029%	0.009%	0.003	98.994%
521	*11:01	*48:01	*04:05	0.029%	-0.006%	-0.002	98.998%
521	*11:01	*51:01	*04:04	0.029%	0.027%	0.101	99.001%
521	*11:01	*51:01	*04:06	0.029%	0.002%	0.001	99.007%
521	*11:01	*54:01	*08:02	0.029%	0.000%	0.000	99.012%
521	*11:01	*55:02	*12:01	0.029%	0.021%	0.008	99.019%
521	*11:01	*55:04	*09:01	0.029%	0.027%	0.207	99.021%
521	*24:02	*15:01	*08:02	0.029%	-0.091%	-0.022	99.025%
521	*24:02	*40:02	*04:01	0.029%	0.003%	0.003	99.029%
521	*24:02	*48:01	*04:03	0.029%	0.001%	0.000	99.034%
521	*24:02	*48:01	*04:07	0.029%	0.024%	0.048	99.039%
521	*24:02	*48:01	*04:10	0.029%	0.007%	0.004	99.044%
521	*24:02	*51:02	*14:54	0.029%	0.026%	0.136	99.047%
521	*24:02	*52:01	*14:05	0.029%	-0.052%	-0.027	99.050%
521	*24:02	*55:02	*04:06	0.029%	0.001%	0.000	99.056%
521	*24:02	*55:02	*11:01	0.029%	0.004%	0.002	99.061%
521	*24:02	*55:02	*12:01	0.029%	-0.003%	-0.001	99.064%
521	*24:02	*59:01	*09:01	0.029%	-0.070%	-0.039	99.066%
521	*24:20	*40:01	*04:05	0.029%	0.024%	0.035	99.069%
521	*24:20	*40:02	*09:01	0.029%	0.021%	0.031	99.072%
521	*24:20	*55:02	*09:01	0.029%	0.027%	0.039	99.075%
521	*26:01	*15:01	*04:05	0.029%	-0.052%	-0.007	99.078%
521	*26:01	*15:01	*12:02	0.029%	0.018%	0.010	99.083%
521	*26:01	*15:01	*14:54	0.029%	0.008%	0.002	99.090%
521	*26:01	*40:01	*14:06	0.029%	0.024%	0.019	99.095%
521	*26:01	*40:02	*14:05	0.029%	0.017%	0.008	99.097%
521	*26:01	*44:03	*13:02	0.029%	0.003%	0.000	99.100%
521	*26:01	*51:01	*11:01	0.029%	0.009%	0.003	99.104%
521	*26:01	*55:02	*08:03	0.029%	0.013%	0.005	99.110%
521	*26:01	*55:02	*15:01	0.029%	0.014%	0.006	99.114%
521	*26:01	*56:01	*14:54	0.029%	0.026%	0.029	99.119%
521	*26:02	*40:06	*15:01	0.029%	0.022%	0.012	99.123%
521	*26:03	*15:01	*04:03	0.029%	0.024%	0.011	99.126%
521	*26:03	*35:01	*04:05	0.029%	0.004%	0.002	99.128%
521	*31:01	*15:18	*04:01	0.029%	0.028%	0.031	99.134%
521	*31:01	*37:01	*10:01	0.029%	0.029%	0.050	99.138%

521	*31:01	*40:01	*12:01	0.029%	0.012%	0.003	99.140%
521	*31:01	*40:02	*04:03	0.029%	0.009%	0.003	99.143%
521	*31:01	*40:03	*14:05	0.029%	0.028%	0.083	99.149%
521	*31:01	*44:03	*08:03	0.029%	-0.019%	-0.003	99.153%
521	*31:01	*51:01	*04:06	0.029%	0.003%	0.001	99.156%
521	*31:01	*51:01	*14:06	0.029%	0.018%	0.014	99.159%
521	*33:03	*15:01	*09:01	0.029%	-0.049%	-0.007	99.161%
521	*33:03	*15:01	*14:06	0.029%	0.022%	0.017	99.165%
521	*33:03	*40:03	*14:05	0.029%	0.028%	0.084	99.170%
521	*33:03	*40:06	*09:01	0.029%	-0.017%	-0.004	99.173%
521	*33:03	*44:03	*04:03	0.029%	0.017%	0.006	99.176%
521	*33:03	*51:01	*09:01	0.029%	-0.064%	-0.009	99.180%
604	*02:01	*15:01	*04:03	0.023%	-0.002%	-0.001	99.183%
604	*02:01	*15:18	*14:54	0.023%	0.017%	0.012	99.186%
604	*02:01	*35:01	*01:01	0.023%	-0.032%	-0.006	99.191%
604	*02:01	*35:01	*14:03	0.023%	0.008%	0.005	99.194%
604	*02:01	*35:01	*14:06	0.023%	0.011%	0.009	99.196%
604	*02:01	*38:02	*04:10	0.023%	0.022%	0.081	99.200%
604	*02:01	*39:01	*04:05	0.023%	-0.031%	-0.009	99.203%
604	*02:01	*39:01	*08:02	0.023%	0.006%	0.002	99.205%
604	*02:01	*40:01	*04:06	0.023%	0.003%	0.001	99.208%
604	*02:01	*40:01	*15:02	0.023%	-0.043%	-0.008	99.212%
604	*02:01	*40:02	*12:01	0.023%	-0.011%	-0.003	99.214%
604	*02:01	*40:06	*08:03	0.023%	-0.023%	-0.005	99.219%
604	*02:01	*40:06	*12:02	0.023%	0.014%	0.008	99.223%
604	*02:01	*44:02	*13:01	0.023%	0.023%	0.060	99.228%
604	*02:01	*51:01	*11:01	0.023%	-0.007%	-0.003	99.229%
604	*02:06	*15:01	*04:05	0.023%	-0.075%	-0.010	99.230%
604	*02:06	*15:01	*08:02	0.023%	-0.008%	-0.002	99.232%
604	*02:06	*15:01	*12:01	0.023%	-0.003%	-0.001	99.236%
604	*02:06	*15:01	*14:54	0.023%	-0.002%	-0.001	99.238%
604	*02:06	*35:01	*14:06	0.023%	0.014%	0.011	99.240%
604	*02:06	*40:02	*04:01	0.023%	0.016%	0.018	99.242%
604	*02:06	*40:02	*15:02	0.023%	-0.057%	-0.007	99.246%
604	*02:06	*48:01	*16:02	0.023%	0.021%	0.021	99.249%
604	*02:06	*51:01	*04:03	0.023%	-0.001%	0.000	99.251%
604	*02:06	*51:01	*11:01	0.023%	-0.001%	0.000	99.252%
604	*02:06	*55:02	*11:01	0.023%	0.017%	0.007	99.255%
604	*02:06	*67:01	*16:02	0.023%	0.022%	0.023	99.258%
604	*02:07	*15:01	*12:01	0.023%	0.013%	0.004	99.260%
604	*02:07	*40:02	*08:03	0.023%	-0.001%	0.000	99.263%
604	*02:07	*46:01	*14:05	0.023%	0.020%	0.010	99.269%
604	*11:01	*15:01	*11:01	0.023%	0.004%	0.001	99.272%
604	*11:01	*15:01	*14:54	0.023%	-0.001%	0.000	99.276%
604	*11:01	*15:01	*14:06	0.023%	0.014%	0.011	99.278%
604	*11:01	*15:01	*15:02	0.023%	-0.051%	-0.007	99.282%
604	*11:01	*15:02	*12:02	0.023%	0.023%	0.499	99.287%
604	*11:01	*15:18	*04:01	0.023%	0.022%	0.025	99.291%
604	*11:01	*35:01	*08:03	0.023%	-0.040%	-0.005	99.294%
604	*11:01	*40:02	*15:01	0.023%	-0.033%	-0.004	99.296%
604	*11:01	*51:01	*04:01	0.023%	0.016%	0.018	99.299%
604	*11:01	*52:01	*04:05	0.023%	-0.115%	-0.013	99.300%
604	*11:01	*54:01	*14:54	0.023%	-0.001%	0.000	99.304%
604	*11:01	*54:01	*15:01	0.023%	-0.030%	-0.004	99.306%

604	*11:01	*55:02	*01:01	0.023%	0.010%	0.004	99.311%
604	*11:01	*55:02	*08:02	0.023%	0.014%	0.006	99.314%
604	*11:01	*55:02	*15:01	0.023%	0.006%	0.002	99.315%
604	*11:01	*67:01	*14:05	0.023%	0.021%	0.018	99.320%
604	*11:02	*27:04	*12:02	0.023%	0.023%	0.138	99.326%
604	*24:02	*07:02	*04:10	0.023%	-0.020%	-0.010	99.328%
604	*24:02	*07:02	*11:01	0.023%	-0.034%	-0.012	99.330%
604	*24:02	*07:02	*14:03	0.023%	-0.010%	-0.006	99.332%
604	*24:02	*15:01	*04:10	0.023%	-0.036%	-0.018	99.336%
604	*24:02	*15:01	*12:01	0.023%	-0.079%	-0.022	99.339%
604	*24:02	*15:01	*14:54	0.023%	-0.074%	-0.022	99.340%
604	*24:02	*15:07	*04:06	0.023%	0.016%	0.028	99.344%
604	*24:02	*15:07	*15:01	0.023%	0.007%	0.012	99.346%
604	*24:02	*15:18	*04:06	0.023%	0.007%	0.005	99.349%
604	*24:02	*15:27	*04:06	0.023%	0.022%	0.326	99.351%
604	*24:02	*15:27	*09:01	0.023%	0.020%	0.297	99.353%
604	*24:02	*35:01	*04:04	0.023%	0.015%	0.059	99.355%
604	*24:02	*35:01	*14:03	0.023%	-0.024%	-0.015	99.358%
604	*24:02	*35:01	*14:05	0.023%	-0.035%	-0.018	99.361%
604	*24:02	*35:01	*15:02	0.023%	-0.289%	-0.037	99.364%
604	*24:02	*39:01	*14:06	0.023%	0.007%	0.006	99.368%
604	*24:02	*40:01	*04:01	0.023%	0.006%	0.007	99.370%
604	*24:02	*40:01	*15:02	0.023%	-0.183%	-0.036	99.372%
604	*24:02	*40:02	*14:03	0.023%	-0.023%	-0.015	99.374%
604	*24:02	*40:02	*14:06	0.023%	-0.014%	-0.011	99.376%
604	*24:02	*40:03	*14:05	0.023%	0.021%	0.061	99.378%
604	*24:02	*40:06	*08:03	0.023%	-0.118%	-0.027	99.382%
604	*24:02	*51:01	*01:01	0.023%	-0.172%	-0.031	99.384%
604	*24:02	*51:01	*12:02	0.023%	-0.038%	-0.021	99.386%
604	*24:02	*51:01	*16:02	0.023%	-0.010%	-0.010	99.388%
604	*24:02	*52:01	*13:02	0.023%	-0.203%	-0.038	99.389%
604	*24:02	*59:01	*08:03	0.023%	-0.036%	-0.020	99.392%
604	*24:02	*59:01	*12:01	0.023%	-0.002%	-0.001	99.394%
604	*24:02	*59:01	*15:01	0.023%	-0.030%	-0.016	99.396%
604	*26:01	*15:18	*04:01	0.023%	0.022%	0.025	99.398%
604	*26:01	*35:01	*14:06	0.023%	0.015%	0.012	99.400%
604	*26:01	*40:01	*08:02	0.023%	0.006%	0.001	99.402%
604	*26:01	*48:01	*04:03	0.023%	0.017%	0.006	99.406%
604	*26:01	*51:01	*04:06	0.023%	0.000%	0.000	99.408%
604	*26:01	*51:01	*08:03	0.023%	-0.038%	-0.005	99.409%
604	*26:01	*55:02	*04:10	0.023%	0.019%	0.009	99.413%
604	*26:01	*55:02	*08:02	0.023%	0.015%	0.006	99.415%
604	*26:01	*56:01	*04:05	0.023%	0.014%	0.015	99.417%
604	*26:02	*15:01	*12:01	0.023%	0.018%	0.010	99.419%
604	*26:02	*40:02	*09:01	0.023%	0.002%	0.001	99.422%
604	*26:02	*44:03	*13:02	0.023%	0.017%	0.009	99.423%
604	*26:03	*35:01	*09:01	0.023%	-0.003%	-0.001	99.426%
604	*26:03	*35:01	*11:01	0.023%	0.018%	0.008	99.428%
604	*26:03	*51:01	*15:01	0.023%	0.007%	0.003	99.429%
604	*26:05	*51:01	*14:54	0.023%	0.023%	0.305	99.432%
604	*29:01	*07:05	*08:03	0.023%	0.023%	0.667	99.436%
604	*31:01	*15:01	*04:03	0.023%	0.004%	0.001	99.437%
604	*31:01	*35:01	*04:07	0.023%	0.020%	0.040	99.440%
604	*31:01	*35:01	*08:03	0.023%	-0.039%	-0.005	99.441%



604	*31:01	*35:01	*14:54	0.023%	-0.002%	-0.001	99.443%
604	*31:01	*48:01	*15:01	0.023%	0.004%	0.001	99.445%
604	*31:01	*54:01	*09:01	0.023%	-0.073%	-0.010	99.447%
604	*31:01	*55:02	*04:05	0.023%	-0.007%	-0.003	99.450%
604	*31:01	*55:02	*09:01	0.023%	-0.008%	-0.003	99.452%
604	*33:03	*15:01	*04:06	0.023%	0.006%	0.002	99.453%
604	*33:03	*40:02	*08:02	0.023%	-0.001%	0.000	99.455%
604	*33:03	*51:01	*14:03	0.023%	0.013%	0.008	99.457%
604	*33:03	*54:01	*08:03	0.023%	-0.022%	-0.003	99.459%
604	*33:03	*54:01	*15:01	0.023%	-0.018%	-0.003	99.461%
710	*01:01	*37:01	*04:05	0.017%	0.017%	0.036	99.465%
710	*01:01	*37:01	*15:02	0.017%	0.017%	0.036	99.469%
710	*02:01	*13:01	*13:02	0.017%	0.010%	0.008	99.472%
710	*02:01	*13:01	*14:05	0.017%	0.015%	0.012	99.474%
710	*02:01	*15:01	*12:01	0.017%	-0.016%	-0.004	99.475%
710	*02:01	*15:01	*14:54	0.017%	-0.014%	-0.004	99.476%
710	*02:01	*15:07	*04:03	0.017%	0.015%	0.026	99.479%
710	*02:01	*15:11	*08:03	0.017%	0.008%	0.008	99.481%
710	*02:01	*15:18	*04:03	0.017%	0.013%	0.009	99.483%
710	*02:01	*15:18	*12:01	0.017%	0.011%	0.008	99.484%
710	*02:01	*15:18	*15:01	0.017%	0.004%	0.003	99.486%
710	*02:01	*39:01	*14:06	0.017%	0.012%	0.010	99.487%
710	*02:01	*40:01	*01:01	0.017%	-0.019%	-0.004	99.489%
710	*02:01	*40:01	*04:03	0.017%	0.000%	0.000	99.490%
710	*02:01	*40:01	*04:10	0.017%	0.004%	0.002	99.491%
710	*02:01	*40:03	*08:02	0.017%	0.016%	0.046	99.494%
710	*02:01	*40:03	*12:01	0.017%	0.016%	0.047	99.495%
710	*02:01	*44:03	*04:05	0.017%	-0.082%	-0.013	99.496%
710	*02:01	*48:01	*04:05	0.017%	-0.027%	-0.010	99.497%
710	*02:01	*48:01	*04:06	0.017%	0.007%	0.002	99.499%
710	*02:01	*48:01	*14:05	0.017%	0.011%	0.005	99.501%
710	*02:01	*54:01	*14:05	0.017%	0.000%	0.000	99.503%
710	*02:01	*55:02	*04:06	0.017%	0.008%	0.003	99.505%
710	*02:01	*55:02	*12:02	0.017%	0.012%	0.007	99.507%
710	*02:01	*56:01	*14:05	0.017%	0.015%	0.017	99.509%
710	*02:01	*67:01	*15:01	0.017%	0.007%	0.006	99.510%
710	*02:06	*15:01	*04:01	0.017%	0.011%	0.012	99.512%
710	*02:06	*15:01	*14:05	0.017%	0.003%	0.002	99.514%
710	*02:06	*15:18	*09:01	0.017%	-0.002%	-0.001	99.515%
710	*02:06	*15:18	*15:01	0.017%	0.007%	0.005	99.516%
710	*02:06	*27:04	*04:05	0.017%	0.015%	0.074	99.518%
710	*02:06	*27:05	*01:01	0.017%	0.017%	0.210	99.520%
710	*02:06	*35:01	*04:01	0.017%	0.011%	0.012	99.522%
710	*02:06	*35:01	*04:06	0.017%	-0.007%	-0.002	99.524%
710	*02:06	*35:01	*04:10	0.017%	0.001%	0.001	99.525%
710	*02:06	*39:01	*04:06	0.017%	0.007%	0.002	99.527%
710	*02:06	*39:01	*04:10	0.017%	0.011%	0.005	99.529%
710	*02:06	*40:01	*11:01	0.017%	0.003%	0.001	99.530%
710	*02:06	*40:01	*15:02	0.017%	-0.036%	-0.007	99.532%
710	*02:06	*40:02	*08:03	0.017%	-0.047%	-0.006	99.533%
710	*02:06	*40:06	*04:06	0.017%	0.004%	0.001	99.535%
710	*02:06	*40:06	*08:02	0.017%	-0.001%	0.000	99.537%
710	*02:06	*40:06	*08:03	0.017%	-0.019%	-0.004	99.539%
710	*02:06	*46:01	*04:05	0.017%	-0.044%	-0.009	99.540%

710	*02:06	*48:01	*12:02	0.017%	0.013%	0.007	99.542%
710	*02:06	*51:01	*04:10	0.017%	-0.001%	0.000	99.543%
710	*02:06	*55:02	*15:02	0.017%	-0.007%	-0.003	99.545%
710	*02:06	*56:01	*04:05	0.017%	0.006%	0.006	99.546%
710	*02:06	*56:01	*09:01	0.017%	0.005%	0.006	99.547%
710	*02:06	*59:01	*08:03	0.017%	0.002%	0.001	99.548%
710	*02:07	*46:01	*04:06	0.017%	0.012%	0.004	99.551%
710	*02:07	*46:01	*11:01	0.017%	0.013%	0.005	99.554%
710	*02:07	*46:01	*16:02	0.017%	0.016%	0.016	99.556%
710	*02:07	*51:01	*04:05	0.017%	-0.027%	-0.008	99.558%
710	*02:07	*51:01	*09:01	0.017%	-0.029%	-0.008	99.559%
710	*02:07	*55:02	*04:05	0.017%	0.006%	0.002	99.561%
710	*03:01	*07:02	*15:01	0.017%	0.016%	0.039	99.563%
710	*03:01	*13:01	*12:02	0.017%	0.017%	0.043	99.565%
710	*11:01	*13:02	*07:01	0.017%	0.017%	0.054	99.568%
710	*11:01	*15:01	*08:02	0.017%	-0.013%	-0.003	99.569%
710	*11:01	*15:01	*12:01	0.017%	-0.008%	-0.002	99.569%
710	*11:01	*15:01	*14:03	0.017%	0.006%	0.004	99.571%
710	*11:01	*15:18	*15:01	0.017%	0.007%	0.005	99.572%
710	*11:01	*35:01	*04:03	0.017%	-0.003%	-0.001	99.574%
710	*11:01	*35:01	*04:10	0.017%	0.002%	0.001	99.575%
710	*11:01	*35:01	*08:02	0.017%	-0.014%	-0.003	99.576%
710	*11:01	*35:01	*11:01	0.017%	-0.003%	-0.001	99.577%
710	*11:01	*35:01	*14:03	0.017%	0.006%	0.004	99.578%
710	*11:01	*39:01	*11:01	0.017%	0.009%	0.003	99.580%
710	*11:01	*51:01	*04:10	0.017%	0.000%	0.000	99.582%
710	*11:01	*54:01	*15:02	0.017%	-0.055%	-0.007	99.584%
710	*11:01	*55:04	*04:05	0.017%	0.016%	0.120	99.585%
710	*11:01	*56:01	*09:01	0.017%	0.006%	0.006	99.586%
710	*11:01	*56:03	*09:01	0.017%	0.014%	0.065	99.587%
710	*11:01	*67:01	*04:05	0.017%	0.003%	0.003	99.589%
710	*11:01	*67:01	*04:06	0.017%	0.014%	0.012	99.591%
710	*11:01	*67:01	*09:01	0.017%	0.003%	0.002	99.592%
710	*11:01	*67:01	*14:54	0.017%	0.014%	0.012	99.594%
710	*11:02	*27:04	*08:03	0.017%	0.017%	0.103	99.597%
710	*11:02	*51:01	*09:01	0.017%	0.015%	0.091	99.598%
710	*24:02	*07:02	*04:03	0.017%	-0.040%	-0.015	99.599%
710	*24:02	*15:01	*01:01	0.017%	-0.146%	-0.026	99.601%
710	*24:02	*15:01	*04:01	0.017%	-0.008%	-0.009	99.602%
710	*24:02	*15:01	*11:01	0.017%	-0.061%	-0.022	99.603%
710	*24:02	*15:07	*09:01	0.017%	-0.013%	-0.024	99.603%
710	*24:02	*15:11	*04:03	0.017%	0.008%	0.008	99.605%
710	*24:02	*15:18	*08:02	0.017%	-0.005%	-0.004	99.607%
710	*24:02	*15:18	*13:02	0.017%	-0.012%	-0.008	99.608%
710	*24:02	*15:18	*14:54	0.017%	-0.001%	-0.001	99.609%
710	*24:02	*35:01	*01:01	0.017%	-0.153%	-0.027	99.611%
710	*24:02	*35:01	*04:06	0.017%	-0.076%	-0.025	99.611%
710	*24:02	*35:01	*12:02	0.017%	-0.036%	-0.020	99.612%
710	*24:02	*35:01	*13:02	0.017%	-0.145%	-0.027	99.613%
710	*24:02	*39:01	*04:03	0.017%	-0.017%	-0.006	99.614%
710	*24:02	*39:01	*04:10	0.017%	-0.009%	-0.004	99.616%
710	*24:02	*39:01	*11:01	0.017%	-0.017%	-0.006	99.617%
710	*24:02	*40:01	*14:06	0.017%	-0.007%	-0.006	99.618%
710	*24:02	*40:02	*15:02	0.017%	-0.292%	-0.038	99.619%

710	*24:02	*40:06	*08:02	0.017%	-0.053%	-0.013	99.621%
710	*24:02	*40:06	*15:02	0.017%	-0.158%	-0.036	99.622%
710	*24:02	*44:02	*13:01	0.017%	0.017%	0.043	99.624%
710	*24:02	*44:03	*04:05	0.017%	-0.289%	-0.049	99.625%
710	*24:02	*46:01	*15:01	0.017%	-0.119%	-0.025	99.626%
710	*24:02	*48:01	*08:02	0.017%	-0.026%	-0.009	99.628%
710	*24:02	*48:01	*14:05	0.017%	-0.003%	-0.001	99.629%
710	*24:02	*51:01	*04:01	0.017%	-0.013%	-0.015	99.629%
710	*24:02	*51:01	*04:06	0.017%	-0.090%	-0.029	99.630%
710	*24:02	*51:01	*14:06	0.017%	-0.026%	-0.021	99.630%
710	*24:02	*52:01	*04:10	0.017%	-0.069%	-0.034	99.631%
710	*24:02	*54:01	*04:10	0.017%	-0.040%	-0.020	99.632%
710	*24:02	*54:01	*11:01	0.017%	-0.059%	-0.022	99.633%
710	*24:02	*55:02	*08:03	0.017%	-0.059%	-0.025	99.634%
710	*24:02	*56:01	*08:02	0.017%	0.003%	0.003	99.635%
710	*24:02	*59:01	*04:10	0.017%	0.003%	0.001	99.636%
710	*24:02	*59:01	*08:02	0.017%	-0.012%	-0.006	99.637%
710	*24:02	*59:01	*10:01	0.017%	0.013%	0.024	99.638%
710	*24:02	*59:01	*15:02	0.017%	-0.056%	-0.031	99.639%
710	*24:20	*54:01	*04:05	0.017%	0.010%	0.015	99.640%
710	*26:01	*07:02	*09:01	0.017%	-0.045%	-0.008	99.641%
710	*26:01	*13:01	*12:02	0.017%	0.016%	0.013	99.643%
710	*26:01	*15:01	*04:03	0.017%	0.001%	0.000	99.644%
710	*26:01	*15:01	*04:10	0.017%	0.005%	0.002	99.646%
710	*26:01	*15:01	*14:02	0.017%	0.017%	0.268	99.647%
710	*26:01	*15:01	*14:06	0.017%	0.010%	0.008	99.648%
710	*26:01	*15:01	*15:02	0.017%	-0.046%	-0.006	99.649%
710	*26:01	*15:11	*04:05	0.017%	0.007%	0.007	99.651%
710	*26:01	*15:11	*09:01	0.017%	0.007%	0.007	99.651%
710	*26:01	*38:01	*04:01	0.017%	0.017%	0.600	99.654%
710	*26:01	*39:01	*01:01	0.017%	0.002%	0.001	99.656%
710	*26:01	*39:01	*04:05	0.017%	-0.019%	-0.005	99.657%
710	*26:01	*39:01	*14:54	0.017%	0.008%	0.002	99.659%
710	*26:01	*40:02	*01:01	0.017%	-0.019%	-0.003	99.661%
710	*26:01	*40:02	*08:03	0.017%	-0.036%	-0.005	99.662%
710	*26:01	*40:02	*12:02	0.017%	0.006%	0.003	99.663%
710	*26:01	*40:02	*13:02	0.017%	-0.017%	-0.003	99.665%
710	*26:01	*40:02	*14:03	0.017%	0.008%	0.005	99.666%
710	*26:01	*40:02	*15:02	0.017%	-0.048%	-0.006	99.666%
710	*26:01	*40:06	*04:06	0.017%	0.006%	0.002	99.668%
710	*26:01	*40:06	*12:01	0.017%	0.005%	0.001	99.670%
710	*26:01	*40:06	*15:01	0.017%	-0.010%	-0.002	99.671%
710	*26:01	*48:01	*14:54	0.017%	0.010%	0.003	99.673%
710	*26:01	*51:02	*08:02	0.017%	0.017%	0.085	99.674%
710	*26:01	*52:01	*14:05	0.017%	0.000%	0.000	99.676%
710	*26:01	*54:01	*08:03	0.017%	-0.033%	-0.004	99.677%
710	*26:01	*54:01	*15:02	0.017%	-0.044%	-0.006	99.678%
710	*26:01	*55:02	*04:05	0.017%	-0.008%	-0.003	99.679%
710	*26:01	*55:02	*11:01	0.017%	0.012%	0.005	99.680%
710	*26:01	*55:02	*14:54	0.017%	0.011%	0.004	99.681%
710	*26:01	*56:01	*01:01	0.017%	0.013%	0.014	99.683%
710	*26:01	*56:01	*14:05	0.017%	0.016%	0.017	99.684%
710	*26:02	*15:01	*08:03	0.017%	0.005%	0.003	99.685%
710	*26:02	*15:01	*14:03	0.017%	0.015%	0.009	99.686%

710	*26:02	*40:01	*09:01	0.017%	0.003%	0.002	99.688%
710	*26:02	*40:06	*08:03	0.017%	0.010%	0.005	99.689%
710	*26:02	*48:01	*09:01	0.017%	0.010%	0.005	99.690%
710	*26:02	*51:01	*09:01	0.017%	-0.008%	-0.004	99.691%
710	*26:02	*56:01	*09:01	0.017%	0.015%	0.016	99.692%
710	*26:03	*13:01	*12:02	0.017%	0.017%	0.014	99.693%
710	*26:03	*15:01	*04:06	0.017%	0.012%	0.005	99.694%
710	*26:03	*35:01	*04:10	0.017%	0.013%	0.006	99.695%
710	*26:03	*35:01	*14:03	0.017%	0.014%	0.009	99.696%
710	*26:03	*39:01	*14:06	0.017%	0.016%	0.013	99.698%
710	*26:03	*40:01	*04:05	0.017%	0.001%	0.000	99.699%
710	*26:03	*40:06	*09:01	0.017%	0.003%	0.001	99.700%
710	*26:03	*55:02	*15:01	0.017%	0.013%	0.006	99.701%
710	*26:03	*59:01	*04:05	0.017%	0.011%	0.006	99.702%
710	*26:05	*51:01	*09:01	0.017%	0.016%	0.220	99.702%
710	*31:01	*15:01	*14:54	0.017%	-0.007%	-0.002	99.703%
710	*31:01	*15:01	*14:06	0.017%	0.009%	0.007	99.704%
710	*31:01	*35:01	*04:06	0.017%	-0.006%	-0.002	99.704%
710	*31:01	*35:01	*14:05	0.017%	0.003%	0.002	99.705%
710	*31:01	*39:01	*04:05	0.017%	-0.024%	-0.007	99.706%
710	*31:01	*39:01	*08:02	0.017%	0.004%	0.001	99.707%
710	*31:01	*39:02	*14:54	0.017%	0.017%	0.060	99.709%
710	*31:01	*40:01	*15:01	0.017%	-0.020%	-0.004	99.710%
710	*31:01	*40:02	*12:01	0.017%	-0.009%	-0.002	99.711%
710	*31:01	*40:02	*13:02	0.017%	-0.022%	-0.004	99.712%
710	*31:01	*40:06	*08:03	0.017%	-0.017%	-0.004	99.714%
710	*31:01	*40:06	*12:01	0.017%	0.003%	0.001	99.715%
710	*31:01	*40:06	*14:54	0.017%	0.003%	0.001	99.717%
710	*31:01	*40:06	*14:05	0.017%	0.009%	0.005	99.719%
710	*31:01	*46:01	*09:01	0.017%	-0.045%	-0.009	99.719%
710	*31:01	*48:01	*08:02	0.017%	0.007%	0.002	99.721%
710	*31:01	*51:01	*01:01	0.017%	-0.031%	-0.005	99.722%
710	*31:01	*51:01	*04:10	0.017%	0.000%	0.000	99.723%
710	*31:01	*51:01	*15:02	0.017%	-0.071%	-0.008	99.723%
710	*31:01	*54:01	*08:03	0.017%	-0.040%	-0.005	99.724%
710	*31:01	*54:01	*13:01	0.017%	0.013%	0.023	99.726%
710	*31:01	*54:01	*15:01	0.017%	-0.035%	-0.005	99.727%
710	*31:01	*55:02	*08:03	0.017%	-0.002%	-0.001	99.728%
710	*31:01	*55:02	*12:01	0.017%	0.009%	0.004	99.729%
710	*31:01	*55:02	*14:54	0.017%	0.010%	0.004	99.730%
710	*33:03	*35:01	*04:10	0.017%	0.005%	0.003	99.731%
710	*33:03	*35:01	*09:01	0.017%	-0.064%	-0.009	99.732%
710	*33:03	*44:03	*01:01	0.017%	-0.008%	-0.001	99.734%
710	*33:03	*51:01	*04:05	0.017%	-0.071%	-0.010	99.735%
710	*33:03	*51:01	*11:01	0.017%	-0.001%	0.000	99.736%
710	*33:03	*58:01	*04:06	0.017%	0.016%	0.026	99.738%
908	*01:01	*13:01	*12:02	0.012%	0.011%	0.024	99.739%
908	*01:01	*37:01	*14:54	0.012%	0.011%	0.024	99.741%
908	*01:01	*51:01	*16:02	0.012%	0.011%	0.024	99.742%
908	*01:01	*67:01	*16:02	0.012%	0.012%	0.025	99.743%
908	*02:01	*13:01	*12:01	0.012%	0.006%	0.005	99.743%
908	*02:01	*13:01	*14:54	0.012%	0.007%	0.005	99.744%
908	*02:01	*15:01	*04:10	0.012%	-0.008%	-0.004	99.745%
908	*02:01	*15:11	*04:10	0.012%	0.009%	0.009	99.746%

908	*02:01	*15:11	*08:02	0.012%	0.007%	0.007	99.746%
908	*02:01	*15:11	*12:01	0.012%	0.007%	0.008	99.747%
908	*02:01	*15:11	*14:05	0.012%	0.009%	0.010	99.748%
908	*02:01	*15:18	*09:01	0.012%	-0.013%	-0.009	99.748%
908	*02:01	*35:01	*04:06	0.012%	-0.019%	-0.006	99.748%
908	*02:01	*38:02	*09:01	0.012%	0.007%	0.025	99.749%
908	*02:01	*39:01	*01:01	0.012%	-0.012%	-0.003	99.750%
908	*02:01	*39:02	*14:06	0.012%	0.011%	0.040	99.751%
908	*02:01	*39:04	*04:05	0.012%	0.008%	0.041	99.752%
908	*02:01	*39:04	*08:03	0.012%	0.010%	0.046	99.752%
908	*02:01	*40:01	*08:09	0.012%	0.011%	0.246	99.753%
908	*02:01	*40:02	*04:06	0.012%	-0.018%	-0.006	99.753%
908	*02:01	*40:02	*11:06	0.012%	0.011%	0.494	99.754%
908	*02:01	*40:02	*12:02	0.012%	-0.005%	-0.003	99.754%
908	*02:01	*40:02	*13:02	0.012%	-0.040%	-0.007	99.755%
908	*02:01	*40:02	*14:03	0.012%	-0.003%	-0.002	99.755%
908	*02:01	*40:03	*04:05	0.012%	0.006%	0.018	99.756%
908	*02:01	*40:06	*14:54	0.012%	-0.007%	-0.002	99.757%
908	*02:01	*40:06	*16:02	0.012%	0.006%	0.007	99.758%
908	*02:01	*44:03	*09:01	0.012%	-0.093%	-0.015	99.758%
908	*02:01	*46:01	*01:01	0.012%	-0.021%	-0.004	99.760%
908	*02:01	*46:01	*14:03	0.012%	0.003%	0.002	99.761%
908	*02:01	*46:01	*15:01	0.012%	-0.032%	-0.007	99.761%
908	*02:01	*46:01	*15:02	0.012%	-0.049%	-0.010	99.762%
908	*02:01	*48:01	*04:07	0.012%	0.010%	0.020	99.763%
908	*02:01	*48:01	*16:02	0.012%	0.008%	0.009	99.764%
908	*02:01	*51:01	*04:10	0.012%	-0.011%	-0.005	99.764%
908	*02:01	*51:01	*16:02	0.012%	0.001%	0.001	99.765%
908	*02:01	*51:02	*09:01	0.012%	0.008%	0.043	99.765%
908	*02:01	*52:01	*04:05	0.012%	-0.168%	-0.015	99.765%
908	*02:01	*52:01	*08:03	0.012%	-0.102%	-0.012	99.766%
908	*02:01	*52:01	*11:01	0.012%	-0.025%	-0.009	99.766%
908	*02:01	*54:01	*14:54	0.012%	-0.019%	-0.006	99.767%
908	*02:01	*55:02	*04:10	0.012%	0.006%	0.003	99.768%
908	*02:01	*55:02	*08:03	0.012%	-0.013%	-0.005	99.768%
908	*02:01	*55:02	*14:05	0.012%	0.006%	0.003	99.769%
908	*02:01	*55:04	*11:01	0.012%	0.011%	0.084	99.769%
908	*02:01	*67:01	*04:05	0.012%	-0.007%	-0.006	99.770%
908	*02:03	*38:02	*15:01	0.012%	0.012%	0.285	99.771%
908	*02:06	*15:01	*01:01	0.012%	-0.030%	-0.005	99.772%
908	*02:06	*15:01	*11:01	0.012%	-0.009%	-0.003	99.772%
908	*02:06	*15:07	*04:03	0.012%	0.010%	0.017	99.773%
908	*02:06	*15:11	*08:03	0.012%	0.004%	0.004	99.774%
908	*02:06	*15:11	*12:02	0.012%	0.010%	0.010	99.775%
908	*02:06	*15:11	*14:05	0.012%	0.010%	0.010	99.776%
908	*02:06	*15:18	*04:03	0.012%	0.008%	0.005	99.776%
908	*02:06	*35:01	*04:07	0.012%	0.008%	0.016	99.777%
908	*02:06	*35:01	*13:02	0.012%	-0.030%	-0.005	99.778%
908	*02:06	*35:01	*15:02	0.012%	-0.069%	-0.009	99.778%
908	*02:06	*39:01	*11:01	0.012%	0.003%	0.001	99.779%
908	*02:06	*39:01	*14:03	0.012%	0.006%	0.004	99.779%
908	*02:06	*39:01	*14:05	0.012%	0.005%	0.003	99.780%
908	*02:06	*39:04	*04:03	0.012%	0.011%	0.053	99.781%
908	*02:06	*40:01	*04:03	0.012%	-0.002%	-0.001	99.781%

908	*02:06	*40:01	*12:02	0.012%	0.003%	0.001	99.782%
908	*02:06	*40:01	*14:05	0.012%	0.002%	0.001	99.782%
908	*02:06	*40:02	*03:01	0.012%	0.011%	0.088	99.783%
908	*02:06	*40:06	*04:10	0.012%	0.003%	0.001	99.783%
908	*02:06	*44:02	*13:01	0.012%	0.011%	0.030	99.784%
908	*02:06	*46:01	*14:06	0.012%	0.006%	0.005	99.785%
908	*02:06	*48:01	*01:01	0.012%	-0.004%	-0.001	99.786%
908	*02:06	*48:01	*04:10	0.012%	0.006%	0.003	99.787%
908	*02:06	*48:01	*08:02	0.012%	0.000%	0.000	99.787%
908	*02:06	*48:01	*14:06	0.012%	0.008%	0.006	99.788%
908	*02:06	*48:01	*15:02	0.012%	-0.016%	-0.006	99.789%
908	*02:06	*51:01	*14:12	0.012%	0.011%	0.395	99.789%
908	*02:06	*51:01	*15:02	0.012%	-0.081%	-0.009	99.789%
908	*02:06	*54:01	*08:02	0.012%	-0.019%	-0.004	99.790%
908	*02:06	*54:01	*12:01	0.012%	-0.014%	-0.004	99.790%
908	*02:06	*55:02	*04:03	0.012%	0.005%	0.002	99.791%
908	*02:06	*55:02	*04:06	0.012%	0.004%	0.002	99.792%
908	*02:06	*55:02	*12:01	0.012%	0.003%	0.001	99.792%
908	*02:06	*56:01	*14:54	0.012%	0.009%	0.009	99.792%
908	*02:06	*56:01	*15:01	0.012%	0.005%	0.005	99.793%
908	*02:06	*67:01	*15:01	0.012%	0.003%	0.003	99.794%
908	*02:07	*13:01	*12:02	0.012%	0.011%	0.009	99.794%
908	*02:07	*15:01	*08:03	0.012%	-0.012%	-0.003	99.795%
908	*02:07	*15:18	*04:01	0.012%	0.011%	0.012	99.795%
908	*02:07	*35:01	*04:05	0.012%	-0.027%	-0.008	99.796%
908	*02:07	*35:01	*15:01	0.012%	-0.010%	-0.003	99.797%
908	*02:07	*39:01	*04:05	0.012%	-0.005%	-0.001	99.797%
908	*02:07	*40:01	*08:03	0.012%	-0.005%	-0.001	99.798%
908	*02:07	*40:06	*09:01	0.012%	-0.011%	-0.003	99.798%
908	*02:07	*46:01	*01:01	0.012%	0.002%	0.000	99.799%
908	*02:07	*46:01	*04:10	0.012%	0.008%	0.004	99.800%
908	*02:07	*46:01	*12:02	0.012%	0.009%	0.005	99.801%
908	*02:07	*46:01	*13:02	0.012%	0.002%	0.001	99.802%
908	*02:07	*46:01	*14:06	0.012%	0.009%	0.007	99.803%
908	*02:07	*48:01	*08:03	0.012%	0.003%	0.001	99.804%
908	*02:07	*48:01	*14:54	0.012%	0.008%	0.003	99.805%
908	*02:07	*48:01	*15:01	0.012%	0.004%	0.001	99.805%
908	*02:07	*51:01	*14:03	0.012%	0.006%	0.004	99.805%
908	*02:07	*51:01	*15:01	0.012%	-0.014%	-0.004	99.806%
908	*02:07	*54:01	*04:05	0.012%	-0.024%	-0.007	99.806%
908	*02:10	*15:07	*04:05	0.012%	0.011%	0.027	99.807%
908	*02:10	*40:06	*08:03	0.012%	0.010%	0.024	99.808%
908	*02:10	*40:06	*15:02	0.012%	0.010%	0.024	99.809%
908	*03:01	*07:02	*01:01	0.012%	0.010%	0.025	99.809%
908	*03:01	*15:01	*04:06	0.012%	0.011%	0.026	99.809%
908	*03:01	*44:02	*08:02	0.012%	0.012%	0.030	99.811%
908	*11:01	*07:02	*15:01	0.012%	-0.028%	-0.005	99.811%
908	*11:01	*13:01	*04:05	0.012%	-0.003%	-0.003	99.812%
908	*11:01	*15:01	*04:01	0.012%	0.005%	0.006	99.812%
908	*11:01	*15:07	*04:03	0.012%	0.010%	0.017	99.813%
908	*11:01	*15:07	*09:01	0.012%	0.004%	0.007	99.814%
908	*11:01	*15:18	*04:03	0.012%	0.008%	0.005	99.815%
908	*11:01	*27:04	*04:05	0.012%	0.009%	0.046	99.815%
908	*11:01	*35:01	*12:02	0.012%	-0.002%	-0.001	99.816%

908	*11:01	*35:01	*14:54	0.012%	-0.014%	-0.004	99.816%
908	*11:01	*38:02	*08:03	0.012%	0.009%	0.034	99.817%
908	*11:01	*39:01	*09:01	0.012%	-0.033%	-0.010	99.818%
908	*11:01	*40:01	*12:01	0.012%	-0.006%	-0.002	99.818%
908	*11:01	*40:01	*14:05	0.012%	0.002%	0.001	99.819%
908	*11:01	*40:01	*15:02	0.012%	-0.040%	-0.007	99.819%
908	*11:01	*40:02	*04:10	0.012%	-0.004%	-0.002	99.820%
908	*11:01	*40:06	*04:05	0.012%	-0.044%	-0.010	99.821%
908	*11:01	*40:06	*12:01	0.012%	-0.003%	-0.001	99.821%
908	*11:01	*46:01	*15:01	0.012%	-0.022%	-0.005	99.822%
908	*11:01	*48:01	*04:03	0.012%	0.005%	0.002	99.822%
908	*11:01	*48:01	*08:03	0.012%	-0.010%	-0.004	99.823%
908	*11:01	*48:01	*12:01	0.012%	0.002%	0.001	99.824%
908	*11:01	*51:01	*04:07	0.012%	0.007%	0.015	99.824%
908	*11:01	*51:01	*08:03	0.012%	-0.060%	-0.007	99.825%
908	*11:01	*51:01	*14:54	0.012%	-0.018%	-0.005	99.825%
908	*11:01	*51:01	*14:05	0.012%	-0.005%	-0.003	99.826%
908	*11:01	*51:01	*15:02	0.012%	-0.078%	-0.009	99.826%
908	*11:01	*51:01	*16:02	0.012%	0.003%	0.004	99.827%
908	*11:01	*51:02	*08:02	0.012%	0.011%	0.055	99.827%
908	*11:01	*52:01	*08:03	0.012%	-0.076%	-0.009	99.828%
908	*11:01	*54:01	*04:03	0.012%	-0.007%	-0.003	99.829%
908	*11:01	*54:01	*04:06	0.012%	-0.010%	-0.003	99.829%
908	*11:01	*54:01	*04:10	0.012%	-0.003%	-0.001	99.830%
908	*11:01	*54:01	*11:01	0.012%	-0.007%	-0.003	99.830%
908	*11:01	*54:01	*12:01	0.012%	-0.013%	-0.004	99.831%
908	*11:01	*54:01	*13:01	0.012%	0.008%	0.013	99.831%
908	*11:01	*54:01	*13:02	0.012%	-0.026%	-0.005	99.832%
908	*11:01	*55:02	*08:03	0.012%	-0.008%	-0.003	99.832%
908	*11:01	*55:02	*11:01	0.012%	0.005%	0.002	99.832%
908	*11:01	*55:02	*12:02	0.012%	0.008%	0.004	99.833%
908	*11:01	*56:01	*04:05	0.012%	0.000%	0.000	99.833%
908	*11:01	*56:03	*15:01	0.012%	0.010%	0.045	99.834%
908	*11:01	*67:01	*04:03	0.012%	0.009%	0.008	99.834%
908	*11:02	*15:07	*04:03	0.012%	0.012%	0.069	99.835%
908	*11:02	*58:01	*13:02	0.012%	0.012%	0.069	99.836%
908	*11:02	*67:01	*12:01	0.012%	0.012%	0.069	99.837%
908	*24:02	*07:02	*04:06	0.012%	-0.054%	-0.017	99.838%
908	*24:02	*07:02	*14:54	0.012%	-0.060%	-0.017	99.838%
908	*24:02	*13:01	*14:06	0.012%	0.006%	0.005	99.839%
908	*24:02	*15:01	*04:04	0.012%	0.004%	0.016	99.839%
908	*24:02	*15:01	*14:03	0.012%	-0.033%	-0.021	99.840%
908	*24:02	*15:01	*14:05	0.012%	-0.044%	-0.023	99.840%
908	*24:02	*15:01	*14:29	0.012%	0.011%	0.486	99.840%
908	*24:02	*15:07	*08:03	0.012%	-0.007%	-0.012	99.841%
908	*24:02	*15:11	*15:02	0.012%	-0.026%	-0.028	99.842%
908	*24:02	*15:18	*04:05	0.012%	-0.059%	-0.043	99.842%
908	*24:02	*15:18	*15:01	0.012%	-0.029%	-0.021	99.842%
908	*24:02	*15:27	*04:05	0.012%	0.008%	0.123	99.843%
908	*24:02	*27:04	*04:03	0.012%	0.010%	0.048	99.843%
908	*24:02	*27:04	*08:03	0.012%	0.005%	0.027	99.844%
908	*24:02	*27:05	*01:01	0.012%	0.010%	0.124	99.845%
908	*24:02	*35:01	*04:07	0.012%	-0.003%	-0.006	99.845%
908	*24:02	*38:02	*08:03	0.012%	0.003%	0.011	99.845%

908	*24:02	*39:01	*01:01	0.012%	-0.061%	-0.018	99.846%
908	*24:02	*39:01	*12:01	0.012%	-0.034%	-0.010	99.846%
908	*24:02	*39:01	*14:54	0.012%	-0.032%	-0.009	99.847%
908	*24:02	*39:02	*09:01	0.012%	-0.003%	-0.011	99.847%
908	*24:02	*40:01	*04:10	0.012%	-0.029%	-0.014	99.847%
908	*24:02	*40:01	*07:01	0.012%	0.003%	0.008	99.848%
908	*24:02	*40:01	*12:02	0.012%	-0.023%	-0.013	99.848%
908	*24:02	*40:01	*13:02	0.012%	-0.095%	-0.018	99.849%
908	*24:02	*40:01	*14:03	0.012%	-0.019%	-0.012	99.849%
908	*24:02	*40:02	*12:02	0.012%	-0.041%	-0.023	99.849%
908	*24:02	*40:02	*13:02	0.012%	-0.149%	-0.028	99.849%
908	*24:02	*40:03	*04:06	0.012%	0.008%	0.023	99.850%
908	*24:02	*40:03	*08:02	0.012%	0.006%	0.019	99.850%
908	*24:02	*40:06	*04:06	0.012%	-0.041%	-0.013	99.851%
908	*24:02	*40:06	*12:02	0.012%	-0.018%	-0.010	99.851%
908	*24:02	*40:06	*14:05	0.012%	-0.021%	-0.011	99.852%
908	*24:02	*46:01	*12:02	0.012%	-0.020%	-0.011	99.852%
908	*24:02	*46:01	*13:02	0.012%	-0.086%	-0.018	99.853%
908	*24:02	*46:01	*14:03	0.012%	-0.017%	-0.011	99.854%
908	*24:02	*48:01	*01:01	0.012%	-0.048%	-0.017	99.854%
908	*24:02	*48:01	*08:03	0.012%	-0.076%	-0.028	99.854%
908	*24:02	*48:01	*12:02	0.012%	-0.007%	-0.004	99.855%
908	*24:02	*48:01	*14:06	0.012%	-0.001%	-0.001	99.855%
908	*24:02	*51:02	*08:02	0.012%	0.009%	0.044	99.855%
908	*24:02	*51:02	*12:01	0.012%	0.009%	0.046	99.856%
908	*24:02	*52:01	*14:03	0.012%	-0.054%	-0.035	99.856%
908	*24:02	*54:01	*04:01	0.012%	-0.013%	-0.015	99.856%
908	*24:02	*54:01	*04:04	0.012%	0.004%	0.017	99.857%
908	*24:02	*54:01	*10:01	0.012%	-0.004%	-0.007	99.857%
908	*24:02	*54:01	*12:02	0.012%	-0.038%	-0.021	99.857%
908	*24:02	*54:01	*13:02	0.012%	-0.139%	-0.026	99.857%
908	*24:02	*54:01	*14:54	0.012%	-0.083%	-0.025	99.857%
908	*24:02	*54:01	*16:02	0.012%	-0.015%	-0.016	99.858%
908	*24:02	*55:02	*12:02	0.012%	-0.005%	-0.003	99.858%
908	*24:02	*55:02	*14:05	0.012%	-0.006%	-0.003	99.858%
908	*24:02	*56:01	*08:03	0.012%	-0.017%	-0.019	99.859%
908	*24:02	*56:01	*11:01	0.012%	0.002%	0.003	99.859%
908	*24:02	*56:01	*12:01	0.012%	-0.001%	-0.001	99.860%
908	*24:02	*56:03	*12:01	0.012%	0.009%	0.039	99.860%
908	*24:02	*67:01	*04:05	0.012%	-0.045%	-0.041	99.861%
908	*24:02	*67:01	*15:01	0.012%	-0.021%	-0.018	99.861%
908	*24:20	*13:01	*12:02	0.012%	0.011%	0.017	99.861%
908	*24:20	*35:01	*04:10	0.012%	0.010%	0.015	99.862%
908	*24:20	*35:01	*08:03	0.012%	0.007%	0.010	99.862%
908	*24:20	*35:01	*09:01	0.012%	0.004%	0.005	99.863%
908	*24:20	*39:01	*15:01	0.012%	0.010%	0.014	99.863%
908	*24:20	*40:01	*08:02	0.012%	0.010%	0.015	99.864%
908	*24:20	*40:01	*11:01	0.012%	0.011%	0.015	99.864%
908	*24:20	*40:02	*14:54	0.012%	0.010%	0.014	99.865%
908	*24:20	*40:06	*09:01	0.012%	0.007%	0.010	99.865%
908	*24:20	*46:01	*09:01	0.012%	0.007%	0.010	99.866%
908	*24:20	*55:02	*15:01	0.012%	0.010%	0.015	99.866%
908	*24:25	*15:01	*09:01	0.012%	0.011%	0.999	99.866%
908	*24:88	*55:02	*09:01	0.012%	0.012%	1.000	99.867%



908	*26:01	*15:01	*14:05	0.012%	0.000%	0.000	99.867%
908	*26:01	*15:02	*12:02	0.012%	0.012%	0.249	99.868%
908	*26:01	*15:07	*04:05	0.012%	0.005%	0.009	99.868%
908	*26:01	*15:11	*04:03	0.012%	0.010%	0.010	99.869%
908	*26:01	*15:18	*04:03	0.012%	0.009%	0.006	99.870%
908	*26:01	*15:18	*08:02	0.012%	0.007%	0.005	99.870%
908	*26:01	*35:01	*01:01	0.012%	-0.025%	-0.004	99.871%
908	*26:01	*35:01	*14:05	0.012%	-0.001%	0.000	99.871%
908	*26:01	*35:01	*15:02	0.012%	-0.055%	-0.007	99.871%
908	*26:01	*39:01	*04:03	0.012%	0.004%	0.002	99.872%
908	*26:01	*39:01	*09:01	0.012%	-0.026%	-0.008	99.872%
908	*26:01	*39:01	*11:01	0.012%	0.004%	0.002	99.873%
908	*26:01	*40:01	*14:54	0.012%	-0.003%	-0.001	99.873%
908	*26:01	*40:01	*15:02	0.012%	-0.032%	-0.006	99.873%
908	*26:01	*40:02	*04:07	0.012%	0.009%	0.017	99.873%
908	*26:01	*40:02	*14:06	0.012%	0.004%	0.003	99.874%
908	*26:01	*40:06	*11:01	0.012%	0.002%	0.001	99.874%
908	*26:01	*40:06	*12:02	0.012%	0.005%	0.003	99.875%
908	*26:01	*40:06	*14:54	0.012%	-0.001%	0.000	99.875%
908	*26:01	*48:01	*08:03	0.012%	-0.007%	-0.003	99.875%
908	*26:01	*51:01	*04:03	0.012%	-0.008%	-0.003	99.876%
908	*26:01	*51:01	*04:10	0.012%	-0.003%	-0.002	99.876%
908	*26:01	*51:01	*12:01	0.012%	-0.014%	-0.004	99.876%
908	*26:01	*51:01	*14:54	0.012%	-0.013%	-0.004	99.876%
908	*26:01	*51:01	*14:05	0.012%	-0.003%	-0.001	99.877%
908	*26:01	*54:01	*16:02	0.012%	0.006%	0.006	99.877%
908	*26:01	*55:02	*04:03	0.012%	0.006%	0.003	99.878%
908	*26:01	*67:01	*15:01	0.012%	0.005%	0.004	99.878%
908	*26:01	*67:01	*16:02	0.012%	0.011%	0.011	99.879%
908	*26:02	*15:01	*15:02	0.012%	-0.004%	-0.002	99.879%
908	*26:02	*35:01	*04:10	0.012%	0.008%	0.005	99.880%
908	*26:02	*35:01	*08:02	0.012%	0.005%	0.003	99.880%
908	*26:02	*35:01	*09:01	0.012%	-0.010%	-0.005	99.880%
908	*26:02	*39:01	*08:03	0.012%	0.006%	0.003	99.881%
908	*26:02	*40:01	*04:05	0.012%	-0.002%	-0.001	99.881%
908	*26:02	*40:01	*12:01	0.012%	0.008%	0.004	99.882%
908	*26:02	*40:02	*04:05	0.012%	-0.009%	-0.005	99.883%
908	*26:02	*40:02	*04:06	0.012%	0.007%	0.004	99.883%
908	*26:02	*40:02	*04:10	0.012%	0.008%	0.005	99.884%
908	*26:02	*40:02	*15:01	0.012%	0.000%	0.000	99.884%
908	*26:02	*40:06	*01:01	0.012%	0.007%	0.004	99.885%
908	*26:02	*40:06	*14:54	0.012%	0.009%	0.005	99.885%
908	*26:02	*40:06	*14:05	0.012%	0.010%	0.005	99.886%
908	*26:02	*55:02	*09:01	0.012%	0.005%	0.003	99.886%
908	*26:03	*07:02	*01:01	0.012%	0.004%	0.002	99.886%
908	*26:03	*15:01	*01:01	0.012%	0.001%	0.001	99.887%
908	*26:03	*15:01	*04:10	0.012%	0.008%	0.004	99.887%
908	*26:03	*15:01	*11:01	0.012%	0.007%	0.003	99.888%
908	*26:03	*35:01	*01:01	0.012%	0.001%	0.000	99.888%
908	*26:03	*35:01	*04:06	0.012%	0.006%	0.003	99.888%
908	*26:03	*35:01	*12:01	0.012%	0.005%	0.002	99.889%
908	*26:03	*35:01	*14:54	0.012%	0.005%	0.002	99.889%
908	*26:03	*39:01	*04:03	0.012%	0.009%	0.004	99.890%
908	*26:03	*39:01	*04:05	0.012%	0.001%	0.000	99.890%

908	*26:03	*39:01	*09:01	0.012%	0.000%	0.000	99.891%
908	*26:03	*39:01	*15:01	0.012%	0.006%	0.002	99.891%
908	*26:03	*40:02	*04:05	0.012%	-0.013%	-0.006	99.891%
908	*26:03	*40:02	*04:10	0.012%	0.008%	0.004	99.892%
908	*26:03	*40:02	*08:02	0.012%	0.004%	0.002	99.892%
908	*26:03	*40:02	*09:01	0.012%	-0.015%	-0.007	99.893%
908	*26:03	*48:01	*09:01	0.012%	0.002%	0.001	99.893%
908	*26:03	*51:01	*08:02	0.012%	0.003%	0.001	99.894%
908	*26:03	*51:01	*09:01	0.012%	-0.019%	-0.008	99.894%
908	*26:03	*55:02	*09:01	0.012%	0.004%	0.002	99.894%
908	*26:03	*56:01	*09:01	0.012%	0.009%	0.009	99.894%
908	*30:04	*14:01	*04:04	0.012%	0.012%	0.498	99.896%
908	*31:01	*15:07	*04:03	0.012%	0.010%	0.017	99.896%
908	*31:01	*15:08	*08:02	0.012%	0.012%	1.000	99.897%
908	*31:01	*15:11	*04:05	0.012%	0.000%	0.000	99.897%
908	*31:01	*15:18	*04:03	0.012%	0.008%	0.006	99.898%
908	*31:01	*15:18	*04:05	0.012%	-0.006%	-0.004	99.898%
908	*31:01	*15:38	*11:01	0.012%	0.012%	0.666	99.899%
908	*31:01	*27:04	*08:03	0.012%	0.010%	0.050	99.899%
908	*31:01	*27:06	*08:03	0.012%	0.012%	1.004	99.900%
908	*31:01	*37:01	*15:01	0.012%	0.007%	0.011	99.900%
908	*31:01	*38:02	*08:03	0.012%	0.009%	0.034	99.901%
908	*31:01	*38:02	*09:01	0.012%	0.008%	0.029	99.901%
908	*31:01	*39:01	*09:01	0.012%	-0.032%	-0.009	99.901%
908	*31:01	*39:01	*12:01	0.012%	0.001%	0.000	99.902%
908	*31:01	*39:02	*01:01	0.012%	0.010%	0.037	99.903%
908	*31:01	*39:04	*04:03	0.012%	0.011%	0.053	99.903%
908	*31:01	*40:01	*04:10	0.012%	0.002%	0.001	99.904%
908	*31:01	*40:01	*08:02	0.012%	-0.009%	-0.002	99.904%
908	*31:01	*40:01	*12:02	0.012%	0.003%	0.002	99.904%
908	*31:01	*40:02	*04:01	0.012%	0.005%	0.006	99.905%
908	*31:01	*40:02	*12:05	0.012%	0.011%	0.663	99.905%
908	*31:01	*40:02	*14:03	0.012%	0.000%	0.000	99.905%
908	*31:01	*40:02	*15:02	0.012%	-0.065%	-0.008	99.905%
908	*31:01	*40:03	*04:10	0.012%	0.011%	0.032	99.906%
908	*31:01	*40:06	*04:05	0.012%	-0.043%	-0.010	99.907%
908	*31:01	*40:06	*04:06	0.012%	-0.001%	0.000	99.907%
908	*31:01	*40:06	*15:01	0.012%	-0.020%	-0.004	99.907%
908	*31:01	*46:01	*12:01	0.012%	-0.004%	-0.001	99.908%
908	*31:01	*46:01	*15:02	0.012%	-0.035%	-0.007	99.908%
908	*31:01	*48:01	*04:04	0.012%	0.011%	0.041	99.909%
908	*31:01	*48:01	*04:07	0.012%	0.010%	0.021	99.910%
908	*31:01	*48:01	*04:10	0.012%	0.006%	0.003	99.910%
908	*31:01	*52:01	*04:03	0.012%	-0.016%	-0.006	99.911%
908	*31:01	*52:01	*14:54	0.012%	-0.023%	-0.007	99.911%
908	*31:01	*54:01	*01:01	0.012%	-0.028%	-0.005	99.912%
908	*31:01	*54:01	*08:02	0.012%	-0.017%	-0.004	99.912%
908	*31:01	*54:01	*13:02	0.012%	-0.026%	-0.005	99.912%
908	*31:01	*54:01	*14:05	0.012%	-0.002%	-0.001	99.913%
908	*31:01	*55:02	*04:01	0.012%	0.010%	0.011	99.913%
908	*31:01	*55:02	*15:02	0.012%	-0.012%	-0.005	99.914%
908	*31:01	*55:04	*09:01	0.012%	0.010%	0.076	99.914%
908	*31:01	*56:01	*14:03	0.012%	0.010%	0.011	99.915%
908	*32:01	*44:02	*04:05	0.012%	0.012%	0.332	99.915%

908	*33:01	*14:02	*01:02	0.012%	0.012%	0.664	99.916%
908	*33:03	*07:02	*13:02	0.012%	-0.010%	-0.002	99.917%
908	*33:03	*15:18	*15:01	0.012%	0.004%	0.003	99.918%
908	*33:03	*27:04	*08:03	0.012%	0.010%	0.051	99.918%
908	*33:03	*35:01	*15:01	0.012%	-0.032%	-0.005	99.919%
908	*33:03	*37:01	*10:01	0.012%	0.011%	0.020	99.919%
908	*33:03	*39:01	*08:03	0.012%	-0.009%	-0.003	99.920%
908	*33:03	*39:01	*15:01	0.012%	-0.007%	-0.002	99.920%
908	*33:03	*40:01	*04:05	0.012%	-0.039%	-0.007	99.921%
908	*33:03	*40:01	*12:01	0.012%	-0.002%	-0.001	99.921%
908	*33:03	*40:01	*15:02	0.012%	-0.028%	-0.005	99.921%
908	*33:03	*40:02	*12:01	0.012%	-0.009%	-0.002	99.922%
908	*33:03	*40:02	*14:54	0.012%	-0.008%	-0.002	99.922%
908	*33:03	*40:02	*15:01	0.012%	-0.032%	-0.005	99.923%
908	*33:03	*40:06	*15:01	0.012%	-0.013%	-0.003	99.923%
908	*33:03	*44:03	*04:06	0.012%	-0.002%	-0.001	99.923%
908	*33:03	*44:03	*14:03	0.012%	0.005%	0.003	99.924%
908	*33:03	*44:03	*14:07	0.012%	0.011%	0.121	99.924%
908	*33:03	*46:01	*01:01	0.012%	-0.008%	-0.002	99.925%
908	*33:03	*46:01	*04:05	0.012%	-0.035%	-0.007	99.925%
908	*33:03	*48:01	*15:01	0.012%	-0.004%	-0.001	99.925%
908	*33:03	*51:01	*04:04	0.012%	0.010%	0.037	99.926%
908	*33:03	*51:01	*13:01	0.012%	0.008%	0.014	99.926%
908	*33:03	*51:01	*16:02	0.012%	0.005%	0.005	99.927%
908	*33:03	*55:02	*14:05	0.012%	0.008%	0.004	99.927%
908	*33:03	*56:01	*09:01	0.012%	0.002%	0.003	99.928%
908	*33:03	*58:01	*04:01	0.012%	0.011%	0.018	99.928%
908	*33:03	*58:01	*13:01	0.012%	0.011%	0.020	99.929%
908	*33:03	*58:01	*15:01	0.012%	0.008%	0.013	99.930%
908	*33:03	*59:01	*04:05	0.012%	-0.007%	-0.003	99.930%
1270	*01:01	*08:01	*07:01	0.006%	0.006%	1.005	99.931%
1270	*01:01	*15:01	*09:01	0.006%	0.001%	0.001	99.931%
1270	*01:01	*35:01	*09:01	0.006%	0.000%	0.001	99.931%
1270	*01:01	*35:01	*13:02	0.006%	0.004%	0.008	99.931%
1270	*01:01	*35:05	*12:02	0.006%	0.006%	0.502	99.932%
1270	*01:01	*37:01	*04:03	0.006%	0.006%	0.012	99.932%
1270	*01:01	*37:01	*08:03	0.006%	0.006%	0.012	99.932%
1270	*01:01	*37:01	*11:01	0.006%	0.006%	0.012	99.933%
1270	*01:01	*37:01	*12:02	0.006%	0.006%	0.012	99.933%
1270	*01:01	*37:01	*13:01	0.006%	0.006%	0.012	99.934%
1270	*01:01	*37:01	*14:03	0.006%	0.006%	0.012	99.934%
1270	*01:01	*37:01	*14:06	0.006%	0.006%	0.012	99.934%
1270	*01:01	*37:01	*15:01	0.006%	0.006%	0.012	99.934%
1270	*01:01	*39:01	*08:02	0.006%	0.005%	0.011	99.935%
1270	*01:01	*40:02	*04:05	0.006%	0.001%	0.002	99.935%
1270	*01:01	*40:02	*11:01	0.006%	0.005%	0.010	99.935%
1270	*01:01	*40:06	*09:01	0.006%	0.003%	0.006	99.935%
1270	*01:01	*54:01	*04:05	0.006%	0.001%	0.002	99.935%
1270	*01:01	*56:01	*09:01	0.006%	0.005%	0.011	99.935%
1270	*01:01	*57:01	*07:01	0.006%	0.006%	1.005	99.936%
1270	*01:01	*58:01	*03:01	0.006%	0.006%	0.048	99.936%
1270	*02:01	*07:02	*04:01	0.006%	0.000%	0.000	99.936%
1270	*02:01	*07:02	*04:05	0.006%	-0.084%	-0.015	99.937%
1270	*02:01	*07:02	*09:01	0.006%	-0.089%	-0.016	99.937%

1270	*02:01	*07:02	*14:03	0.006%	-0.005%	-0.003	99.937%
1270	*02:01	*07:02	*15:01	0.006%	-0.045%	-0.008	99.937%
1270	*02:01	*13:01	*08:03	0.006%	-0.006%	-0.005	99.937%
1270	*02:01	*13:01	*15:01	0.006%	-0.005%	-0.004	99.937%
1270	*02:01	*13:01	*15:02	0.006%	-0.009%	-0.008	99.938%
1270	*02:01	*14:02	*01:02	0.006%	0.006%	0.251	99.938%
1270	*02:01	*15:01	*04:04	0.006%	0.003%	0.013	99.938%
1270	*02:01	*15:01	*14:07	0.006%	0.005%	0.054	99.938%
1270	*02:01	*15:01	*15:02	0.006%	-0.091%	-0.012	99.938%
1270	*02:01	*15:04	*14:02	0.006%	0.006%	1.005	99.939%
1270	*02:01	*15:07	*09:01	0.006%	-0.004%	-0.007	99.939%
1270	*02:01	*15:07	*11:01	0.006%	0.004%	0.007	99.939%
1270	*02:01	*15:07	*13:02	0.006%	0.002%	0.003	99.939%
1270	*02:01	*15:11	*04:01	0.006%	0.005%	0.005	99.939%
1270	*02:01	*15:11	*04:07	0.006%	0.005%	0.010	99.940%
1270	*02:01	*15:11	*12:02	0.006%	0.004%	0.004	99.940%
1270	*02:01	*15:11	*14:03	0.006%	0.004%	0.004	99.940%
1270	*02:01	*15:18	*01:01	0.006%	-0.004%	-0.003	99.940%
1270	*02:01	*15:18	*04:06	0.006%	0.000%	0.000	99.940%
1270	*02:01	*15:18	*14:03	0.006%	0.003%	0.002	99.940%
1270	*02:01	*15:18	*14:05	0.006%	0.002%	0.002	99.941%
1270	*02:01	*15:27	*09:01	0.006%	0.005%	0.068	99.941%
1270	*02:01	*18:01	*04:03	0.006%	0.006%	1.008	99.941%
1270	*02:01	*27:04	*11:01	0.006%	0.005%	0.025	99.941%
1270	*02:01	*27:04	*12:02	0.006%	0.005%	0.026	99.941%
1270	*02:01	*35:01	*04:01	0.006%	-0.003%	-0.003	99.941%
1270	*02:01	*35:01	*04:04	0.006%	0.003%	0.013	99.941%
1270	*02:01	*35:01	*14:02	0.006%	0.005%	0.083	99.942%
1270	*02:01	*35:01	*14:05	0.006%	-0.013%	-0.007	99.942%
1270	*02:01	*35:01	*15:02	0.006%	-0.095%	-0.012	99.942%
1270	*02:01	*35:35	*08:03	0.006%	0.006%	0.998	99.942%
1270	*02:01	*37:01	*01:01	0.006%	0.001%	0.002	99.942%
1270	*02:01	*38:02	*13:01	0.006%	0.006%	0.020	99.942%
1270	*02:01	*38:02	*15:01	0.006%	0.003%	0.012	99.942%
1270	*02:01	*39:01	*04:03	0.006%	-0.005%	-0.002	99.943%
1270	*02:01	*39:01	*11:01	0.006%	-0.005%	-0.002	99.943%
1270	*02:01	*39:01	*12:01	0.006%	-0.009%	-0.003	99.943%
1270	*02:01	*39:01	*14:54	0.006%	-0.008%	-0.002	99.943%
1270	*02:01	*39:01	*15:02	0.006%	-0.037%	-0.011	99.943%
1270	*02:01	*39:01	*16:02	0.006%	0.002%	0.002	99.943%
1270	*02:01	*39:02	*09:01	0.006%	0.001%	0.004	99.943%
1270	*02:01	*39:04	*14:05	0.006%	0.005%	0.026	99.943%
1270	*02:01	*40:01	*04:04	0.006%	0.004%	0.016	99.943%
1270	*02:01	*40:01	*10:01	0.006%	0.002%	0.004	99.944%
1270	*02:01	*40:01	*12:02	0.006%	-0.006%	-0.003	99.944%
1270	*02:01	*40:01	*14:03	0.006%	-0.004%	-0.003	99.944%
1270	*02:01	*40:02	*01:01	0.006%	-0.049%	-0.008	99.944%
1270	*02:01	*40:02	*04:01	0.006%	-0.003%	-0.003	99.944%
1270	*02:01	*40:02	*14:02	0.006%	0.005%	0.083	99.944%
1270	*02:01	*40:02	*14:06	0.006%	-0.006%	-0.005	99.944%
1270	*02:01	*40:03	*01:01	0.006%	0.004%	0.010	99.944%
1270	*02:01	*40:03	*09:01	0.006%	0.000%	0.000	99.944%
1270	*02:01	*40:03	*14:06	0.006%	0.005%	0.016	99.944%
1270	*02:01	*40:06	*01:01	0.006%	-0.025%	-0.006	99.945%

1270	*02:01	*40:06	*04:05	0.006%	-0.066%	-0.015	99.945%
1270	*02:01	*40:06	*04:06	0.006%	-0.011%	-0.003	99.945%
1270	*02:01	*40:06	*08:02	0.006%	-0.017%	-0.004	99.945%
1270	*02:01	*40:06	*12:01	0.006%	-0.013%	-0.004	99.945%
1270	*02:01	*40:06	*13:02	0.006%	-0.024%	-0.005	99.945%
1270	*02:01	*40:06	*14:05	0.006%	-0.005%	-0.002	99.945%
1270	*02:01	*40:06	*14:06	0.006%	-0.001%	-0.001	99.945%
1270	*02:01	*40:50	*08:02	0.006%	0.006%	0.496	99.946%
1270	*02:01	*40:50	*08:03	0.006%	0.006%	0.499	99.946%
1270	*02:01	*44:03	*08:03	0.006%	-0.057%	-0.009	99.946%
1270	*02:01	*44:03	*14:54	0.006%	-0.019%	-0.006	99.946%
1270	*02:01	*46:01	*04:05	0.006%	-0.071%	-0.015	99.946%
1270	*02:01	*46:01	*08:02	0.006%	-0.019%	-0.004	99.946%
1270	*02:01	*46:01	*12:01	0.006%	-0.015%	-0.004	99.946%
1270	*02:01	*48:01	*04:10	0.006%	-0.001%	-0.001	99.946%
1270	*02:01	*48:01	*08:02	0.006%	-0.008%	-0.003	99.946%
1270	*02:01	*48:01	*14:07	0.006%	0.006%	0.060	99.947%
1270	*02:01	*48:01	*15:02	0.006%	-0.029%	-0.010	99.947%
1270	*02:01	*51:01	*04:01	0.006%	-0.004%	-0.004	99.947%
1270	*02:01	*51:01	*04:04	0.006%	0.003%	0.011	99.947%
1270	*02:01	*51:01	*04:07	0.006%	0.000%	0.001	99.947%
1270	*02:01	*51:01	*10:01	0.006%	0.000%	-0.001	99.947%
1270	*02:01	*51:01	*14:06	0.006%	-0.008%	-0.006	99.947%
1270	*02:01	*51:01	*14:12	0.006%	0.006%	0.193	99.947%
1270	*02:01	*52:01	*04:06	0.006%	-0.036%	-0.011	99.947%
1270	*02:01	*52:01	*12:01	0.006%	-0.042%	-0.012	99.947%
1270	*02:01	*52:01	*15:01	0.006%	-0.096%	-0.013	99.947%
1270	*02:01	*54:01	*04:03	0.006%	-0.019%	-0.007	99.947%
1270	*02:01	*54:01	*04:10	0.006%	-0.013%	-0.006	99.947%
1270	*02:01	*54:01	*08:02	0.006%	-0.032%	-0.008	99.948%
1270	*02:01	*54:01	*11:01	0.006%	-0.019%	-0.007	99.948%
1270	*02:01	*54:01	*13:01	0.006%	0.001%	0.001	99.948%
1270	*02:01	*54:01	*13:02	0.006%	-0.043%	-0.008	99.948%
1270	*02:01	*54:01	*15:02	0.006%	-0.088%	-0.012	99.948%
1270	*02:01	*55:02	*04:03	0.006%	-0.002%	-0.001	99.948%
1270	*02:01	*55:02	*08:02	0.006%	-0.007%	-0.003	99.948%
1270	*02:01	*55:02	*14:54	0.006%	-0.004%	-0.002	99.948%
1270	*02:01	*55:02	*14:03	0.006%	0.001%	0.001	99.948%
1270	*02:01	*55:02	*15:02	0.006%	-0.025%	-0.010	99.948%
1270	*02:01	*55:04	*13:02	0.006%	0.005%	0.037	99.948%
1270	*02:01	*55:04	*14:54	0.006%	0.005%	0.039	99.948%
1270	*02:01	*55:04	*14:05	0.006%	0.006%	0.042	99.949%
1270	*02:01	*56:01	*08:03	0.006%	-0.003%	-0.004	99.949%
1270	*02:01	*56:01	*13:02	0.006%	0.000%	0.000	99.949%
1270	*02:01	*56:01	*15:01	0.006%	-0.003%	-0.003	99.949%
1270	*02:01	*58:01	*03:01	0.006%	0.006%	0.047	99.949%
1270	*02:01	*58:01	*13:02	0.006%	0.002%	0.003	99.949%
1270	*02:01	*67:01	*04:06	0.006%	0.002%	0.001	99.949%
1270	*02:01	*67:01	*04:10	0.006%	0.003%	0.003	99.949%
1270	*02:01	*67:01	*08:03	0.006%	-0.006%	-0.005	99.949%
1270	*02:01	*67:01	*09:01	0.006%	-0.013%	-0.012	99.950%
1270	*02:01	*67:01	*13:02	0.006%	-0.002%	-0.001	99.950%
1270	*02:01	*67:01	*15:02	0.006%	-0.009%	-0.007	99.950%
1270	*02:03	*38:02	*15:02	0.006%	0.006%	0.144	99.950%

1270	*02:03	*38:02	*16:02	0.006%	0.006%	0.144	99.951%
1270	*02:03	*51:02	*14:03	0.006%	0.006%	0.144	99.951%
1270	*02:03	*54:01	*04:05	0.006%	0.005%	0.135	99.951%
1270	*02:03	*58:01	*13:02	0.006%	0.006%	0.144	99.951%
1270	*02:06	*07:02	*04:06	0.006%	-0.011%	-0.003	99.951%
1270	*02:06	*07:02	*08:02	0.006%	-0.017%	-0.004	99.952%
1270	*02:06	*07:02	*08:03	0.006%	-0.040%	-0.007	99.952%
1270	*02:06	*07:02	*11:01	0.006%	-0.009%	-0.003	99.952%
1270	*02:06	*07:02	*15:01	0.006%	-0.035%	-0.006	99.952%
1270	*02:06	*13:01	*11:01	0.006%	0.003%	0.002	99.952%
1270	*02:06	*15:01	*04:07	0.006%	0.002%	0.004	99.952%
1270	*02:06	*15:01	*04:10	0.006%	-0.009%	-0.004	99.952%
1270	*02:06	*15:01	*12:02	0.006%	-0.007%	-0.004	99.953%
1270	*02:06	*15:01	*13:01	0.006%	0.002%	0.003	99.953%
1270	*02:06	*15:01	*15:02	0.006%	-0.071%	-0.009	99.953%
1270	*02:06	*15:11	*04:07	0.006%	0.005%	0.011	99.953%
1270	*02:06	*15:11	*15:01	0.006%	-0.001%	-0.001	99.953%
1270	*02:06	*15:18	*04:10	0.006%	0.003%	0.002	99.953%
1270	*02:06	*15:18	*08:02	0.006%	0.000%	0.000	99.953%
1270	*02:06	*15:18	*14:54	0.006%	0.001%	0.001	99.953%
1270	*02:06	*15:18	*14:05	0.006%	0.003%	0.002	99.953%
1270	*02:06	*15:28	*04:05	0.006%	0.006%	1.000	99.954%
1270	*02:06	*27:04	*08:03	0.006%	0.004%	0.021	99.954%
1270	*02:06	*27:04	*12:01	0.006%	0.005%	0.025	99.954%
1270	*02:06	*27:04	*12:02	0.006%	0.005%	0.027	99.954%
1270	*02:06	*27:04	*15:02	0.006%	0.004%	0.019	99.954%
1270	*02:06	*27:05	*04:10	0.006%	0.006%	0.069	99.954%
1270	*02:06	*35:01	*01:01	0.006%	-0.038%	-0.007	99.954%
1270	*02:06	*35:01	*13:01	0.006%	0.001%	0.002	99.954%
1270	*02:06	*35:01	*16:02	0.006%	-0.002%	-0.002	99.955%
1270	*02:06	*38:02	*04:10	0.006%	0.005%	0.019	99.955%
1270	*02:06	*38:02	*08:03	0.006%	0.004%	0.013	99.955%
1270	*02:06	*39:01	*12:01	0.006%	-0.006%	-0.002	99.955%
1270	*02:06	*39:01	*12:02	0.006%	0.000%	0.000	99.955%
1270	*02:06	*39:01	*13:02	0.006%	-0.012%	-0.003	99.955%
1270	*02:06	*39:01	*15:02	0.006%	-0.028%	-0.008	99.955%
1270	*02:06	*39:02	*15:01	0.006%	0.004%	0.014	99.955%
1270	*02:06	*39:04	*08:03	0.006%	0.004%	0.020	99.955%
1270	*02:06	*40:01	*08:02	0.006%	-0.016%	-0.004	99.955%
1270	*02:06	*40:01	*14:06	0.006%	-0.001%	0.000	99.955%
1270	*02:06	*40:02	*04:03	0.006%	-0.015%	-0.005	99.956%
1270	*02:06	*40:02	*12:02	0.006%	-0.008%	-0.004	99.956%
1270	*02:06	*40:02	*13:02	0.006%	-0.036%	-0.006	99.956%
1270	*02:06	*40:02	*14:03	0.006%	-0.006%	-0.004	99.956%
1270	*02:06	*40:03	*04:05	0.006%	0.002%	0.004	99.956%
1270	*02:06	*40:03	*15:01	0.006%	0.003%	0.010	99.956%
1270	*02:06	*40:06	*04:01	0.006%	0.002%	0.002	99.956%
1270	*02:06	*40:06	*04:03	0.006%	-0.006%	-0.002	99.956%
1270	*02:06	*40:06	*13:02	0.006%	-0.018%	-0.004	99.956%
1270	*02:06	*40:06	*14:06	0.006%	0.000%	0.000	99.956%
1270	*02:06	*40:06	*14:07	0.006%	0.005%	0.059	99.957%
1270	*02:06	*44:03	*08:03	0.006%	-0.044%	-0.007	99.957%
1270	*02:06	*44:03	*09:01	0.006%	-0.077%	-0.013	99.957%
1270	*02:06	*44:03	*14:03	0.006%	-0.004%	-0.002	99.957%

1270	*02:06	*46:01	*15:02	0.006%	-0.042%	-0.009	99.957%
1270	*02:06	*48:01	*04:01	0.006%	0.003%	0.004	99.957%
1270	*02:06	*48:01	*04:06	0.006%	-0.003%	-0.001	99.957%
1270	*02:06	*48:01	*08:03	0.006%	-0.017%	-0.006	99.957%
1270	*02:06	*48:01	*11:01	0.006%	-0.002%	-0.001	99.957%
1270	*02:06	*48:01	*12:01	0.006%	-0.004%	-0.001	99.957%
1270	*02:06	*51:01	*04:06	0.006%	-0.022%	-0.007	99.957%
1270	*02:06	*51:01	*04:07	0.006%	0.002%	0.003	99.957%
1270	*02:06	*51:01	*12:02	0.006%	-0.010%	-0.005	99.958%
1270	*02:06	*51:01	*14:06	0.006%	-0.005%	-0.004	99.958%
1270	*02:06	*52:01	*09:01	0.006%	-0.145%	-0.016	99.958%
1270	*02:06	*52:01	*14:54	0.006%	-0.031%	-0.009	99.958%
1270	*02:06	*54:01	*01:01	0.006%	-0.035%	-0.006	99.958%
1270	*02:06	*54:01	*04:06	0.006%	-0.017%	-0.005	99.958%
1270	*02:06	*54:01	*04:07	0.006%	0.002%	0.005	99.958%
1270	*02:06	*54:01	*04:10	0.006%	-0.009%	-0.004	99.958%
1270	*02:06	*54:01	*09:01	0.006%	-0.095%	-0.013	99.958%
1270	*02:06	*54:01	*14:05	0.006%	-0.008%	-0.004	99.958%
1270	*02:06	*55:02	*01:01	0.006%	-0.008%	-0.003	99.958%
1270	*02:06	*55:02	*12:02	0.006%	0.002%	0.001	99.958%
1270	*02:06	*55:02	*14:06	0.006%	0.003%	0.002	99.958%
1270	*02:06	*55:02	*14:07	0.006%	0.006%	0.061	99.958%
1270	*02:06	*56:01	*01:01	0.006%	0.001%	0.001	99.958%
1270	*02:06	*56:01	*08:03	0.006%	-0.002%	-0.002	99.959%
1270	*02:06	*56:01	*12:02	0.006%	0.004%	0.005	99.959%
1270	*02:06	*56:03	*12:01	0.006%	0.005%	0.022	99.959%
1270	*02:06	*58:01	*04:05	0.006%	-0.002%	-0.003	99.959%
1270	*02:06	*59:01	*15:01	0.006%	-0.008%	-0.004	99.959%
1270	*02:06	*67:01	*04:05	0.006%	-0.009%	-0.008	99.959%
1270	*02:07	*15:01	*14:54	0.006%	-0.004%	-0.001	99.959%
1270	*02:07	*15:07	*14:03	0.006%	0.005%	0.009	99.959%
1270	*02:07	*35:01	*08:03	0.006%	-0.019%	-0.005	99.959%
1270	*02:07	*35:01	*12:01	0.006%	-0.005%	-0.001	99.960%
1270	*02:07	*35:01	*14:54	0.006%	-0.004%	-0.001	99.960%
1270	*02:07	*35:01	*14:02	0.006%	0.006%	0.088	99.960%
1270	*02:07	*35:01	*14:03	0.006%	0.001%	0.001	99.960%
1270	*02:07	*37:01	*10:01	0.006%	0.006%	0.010	99.960%
1270	*02:07	*39:01	*08:02	0.006%	0.001%	0.000	99.960%
1270	*02:07	*39:01	*14:06	0.006%	0.004%	0.003	99.961%
1270	*02:07	*39:02	*09:01	0.006%	0.004%	0.016	99.961%
1270	*02:07	*40:01	*14:54	0.006%	-0.001%	0.000	99.961%
1270	*02:07	*40:01	*14:05	0.006%	0.002%	0.001	99.961%
1270	*02:07	*40:02	*01:01	0.006%	-0.011%	-0.003	99.961%
1270	*02:07	*40:02	*08:02	0.006%	-0.006%	-0.002	99.961%
1270	*02:07	*40:02	*09:01	0.006%	-0.035%	-0.010	99.962%
1270	*02:07	*40:02	*11:01	0.006%	-0.002%	-0.001	99.962%
1270	*02:07	*40:02	*14:54	0.006%	-0.004%	-0.001	99.962%
1270	*02:07	*40:02	*15:01	0.006%	-0.016%	-0.005	99.962%
1270	*02:07	*40:06	*04:05	0.006%	-0.016%	-0.005	99.962%
1270	*02:07	*40:06	*08:02	0.006%	-0.001%	0.000	99.962%
1270	*02:07	*40:06	*12:01	0.006%	0.000%	0.000	99.962%
1270	*02:07	*44:03	*08:03	0.006%	-0.013%	-0.004	99.962%
1270	*02:07	*44:03	*09:01	0.006%	-0.025%	-0.007	99.963%
1270	*02:07	*44:03	*14:03	0.006%	0.002%	0.001	99.963%

1270	*02:07	*46:01	*04:03	0.006%	0.001%	0.000	99.963%
1270	*02:07	*46:01	*08:02	0.006%	-0.002%	0.000	99.963%
1270	*02:07	*46:01	*14:54	0.006%	0.000%	0.000	99.963%
1270	*02:07	*46:01	*14:03	0.006%	0.003%	0.002	99.963%
1270	*02:07	*46:01	*14:07	0.006%	0.006%	0.061	99.963%
1270	*02:07	*46:01	*15:02	0.006%	-0.012%	-0.004	99.963%
1270	*02:07	*48:01	*14:05	0.006%	0.004%	0.002	99.963%
1270	*02:07	*51:01	*04:03	0.006%	-0.003%	-0.001	99.964%
1270	*02:07	*51:01	*04:06	0.006%	-0.005%	-0.001	99.964%
1270	*02:07	*51:01	*08:03	0.006%	-0.022%	-0.006	99.964%
1270	*02:07	*51:01	*14:05	0.006%	-0.001%	0.000	99.964%
1270	*02:07	*51:01	*16:02	0.006%	0.003%	0.003	99.964%
1270	*02:07	*52:01	*04:05	0.006%	-0.048%	-0.014	99.964%
1270	*02:07	*52:01	*15:01	0.006%	-0.025%	-0.007	99.964%
1270	*02:07	*54:01	*04:06	0.006%	-0.003%	-0.001	99.964%
1270	*02:07	*55:02	*01:01	0.006%	0.001%	0.000	99.964%
1270	*02:07	*55:02	*04:06	0.006%	0.003%	0.001	99.965%
1270	*02:07	*55:02	*09:01	0.006%	-0.007%	-0.003	99.965%
1270	*02:07	*56:01	*04:10	0.006%	0.005%	0.006	99.965%
1270	*02:07	*56:01	*14:05	0.006%	0.005%	0.006	99.965%
1270	*02:07	*58:01	*15:01	0.006%	0.004%	0.007	99.965%
1270	*02:07	*59:01	*04:05	0.006%	-0.003%	-0.002	99.965%
1270	*02:10	*15:01	*14:29	0.006%	0.006%	0.251	99.965%
1270	*02:10	*35:01	*04:03	0.006%	0.005%	0.012	99.966%
1270	*02:10	*35:01	*14:54	0.006%	0.005%	0.011	99.966%
1270	*02:10	*40:01	*09:01	0.006%	0.003%	0.006	99.966%
1270	*02:10	*40:01	*11:01	0.006%	0.005%	0.013	99.966%
1270	*02:10	*40:06	*04:06	0.006%	0.005%	0.013	99.966%
1270	*02:10	*40:06	*15:01	0.006%	0.004%	0.011	99.966%
1270	*02:10	*40:06	*16:02	0.006%	0.006%	0.014	99.966%
1270	*02:10	*51:01	*14:54	0.006%	0.004%	0.011	99.966%
1270	*02:10	*54:01	*04:05	0.006%	0.002%	0.004	99.966%
1270	*02:13	*40:02	*14:05	0.006%	0.006%	1.006	99.967%
1270	*02:18	*38:02	*04:10	0.006%	0.006%	0.126	99.967%
1270	*02:28	*55:02	*08:03	0.006%	0.006%	1.007	99.967%
1270	*03:01	*07:02	*07:01	0.006%	0.006%	0.014	99.967%
1270	*03:01	*15:01	*15:01	0.006%	0.003%	0.008	99.967%
1270	*03:01	*35:01	*12:01	0.006%	0.005%	0.011	99.968%
1270	*03:01	*35:01	*15:01	0.006%	0.003%	0.008	99.968%
1270	*03:01	*40:02	*14:05	0.006%	0.005%	0.013	99.968%
1270	*03:01	*44:02	*04:10	0.006%	0.006%	0.015	99.968%
1270	*03:01	*44:02	*08:03	0.006%	0.006%	0.015	99.968%
1270	*03:01	*44:02	*12:01	0.006%	0.006%	0.015	99.968%
1270	*03:01	*50:01	*07:01	0.006%	0.006%	0.502	99.969%
1270	*03:01	*51:01	*15:01	0.006%	0.003%	0.007	99.969%
1270	*03:01	*52:01	*12:01	0.006%	0.004%	0.010	99.969%
1270	*03:01	*56:01	*09:01	0.006%	0.005%	0.013	99.969%
1270	*03:01	*67:01	*15:01	0.006%	0.005%	0.013	99.969%
1270	*03:02	*13:02	*01:01	0.006%	0.006%	0.059	99.970%
1270	*03:02	*13:02	*14:54	0.006%	0.006%	0.059	99.970%
1270	*11:01	*07:02	*08:03	0.006%	-0.038%	-0.007	99.970%
1270	*11:01	*07:05	*12:02	0.006%	0.006%	0.124	99.970%
1270	*11:01	*13:01	*09:01	0.006%	-0.010%	-0.008	99.970%
1270	*11:01	*13:01	*15:01	0.006%	-0.003%	-0.002	99.970%



1270	*11:01	*13:01	*15:11	0.006%	0.006%	1.006	99.971%
1270	*11:01	*15:01	*01:01	0.006%	-0.035%	-0.006	99.971%
1270	*11:01	*15:01	*13:07	0.006%	0.006%	0.497	99.971%
1270	*11:01	*15:02	*09:01	0.006%	0.005%	0.114	99.971%
1270	*11:01	*15:11	*08:03	0.006%	-0.002%	-0.002	99.971%
1270	*11:01	*15:11	*15:02	0.006%	-0.004%	-0.004	99.971%
1270	*11:01	*15:18	*04:05	0.006%	-0.012%	-0.008	99.971%
1270	*11:01	*15:18	*08:03	0.006%	-0.005%	-0.004	99.971%
1270	*11:01	*15:18	*12:01	0.006%	0.001%	0.001	99.971%
1270	*11:01	*15:18	*15:02	0.006%	-0.008%	-0.006	99.972%
1270	*11:01	*15:35	*15:02	0.006%	0.006%	0.499	99.972%
1270	*11:01	*27:04	*12:01	0.006%	0.005%	0.025	99.972%
1270	*11:01	*27:05	*04:03	0.006%	0.006%	0.069	99.972%
1270	*11:01	*35:01	*04:07	0.006%	0.002%	0.004	99.972%
1270	*11:01	*35:01	*13:02	0.006%	-0.035%	-0.006	99.972%
1270	*11:01	*35:01	*14:06	0.006%	-0.004%	-0.003	99.972%
1270	*11:01	*38:02	*01:01	0.006%	0.004%	0.016	99.972%
1270	*11:01	*38:02	*15:02	0.006%	0.003%	0.011	99.973%
1270	*11:01	*39:01	*01:01	0.006%	-0.012%	-0.004	99.973%
1270	*11:01	*39:01	*04:10	0.006%	-0.001%	0.000	99.973%
1270	*11:01	*39:01	*08:02	0.006%	-0.007%	-0.002	99.973%
1270	*11:01	*39:01	*12:01	0.006%	-0.005%	-0.002	99.973%
1270	*11:01	*39:01	*14:54	0.006%	-0.005%	-0.001	99.973%
1270	*11:01	*39:01	*14:03	0.006%	0.001%	0.001	99.973%
1270	*11:01	*39:01	*15:02	0.006%	-0.027%	-0.008	99.973%
1270	*11:01	*39:02	*04:05	0.006%	0.002%	0.009	99.973%
1270	*11:01	*39:02	*09:01	0.006%	0.002%	0.008	99.973%
1270	*11:01	*40:01	*04:06	0.006%	-0.010%	-0.003	99.974%
1270	*11:01	*40:01	*08:02	0.006%	-0.015%	-0.003	99.974%
1270	*11:01	*40:01	*08:09	0.006%	0.006%	0.122	99.974%
1270	*11:01	*40:01	*14:03	0.006%	-0.002%	-0.001	99.974%
1270	*11:01	*40:02	*04:03	0.006%	-0.014%	-0.005	99.974%
1270	*11:01	*40:02	*04:06	0.006%	-0.017%	-0.005	99.974%
1270	*11:01	*40:02	*12:01	0.006%	-0.020%	-0.006	99.974%
1270	*11:01	*40:03	*14:05	0.006%	0.005%	0.015	99.974%
1270	*11:01	*40:06	*04:10	0.006%	-0.003%	-0.001	99.974%
1270	*11:01	*40:06	*14:54	0.006%	-0.008%	-0.002	99.974%
1270	*11:01	*40:06	*14:06	0.006%	0.001%	0.000	99.974%
1270	*11:01	*40:06	*15:02	0.006%	-0.038%	-0.008	99.974%
1270	*11:01	*44:03	*08:03	0.006%	-0.043%	-0.007	99.975%
1270	*11:01	*46:01	*04:06	0.006%	-0.008%	-0.003	99.975%
1270	*11:01	*46:01	*15:02	0.006%	-0.041%	-0.008	99.975%
1270	*11:01	*48:01	*04:10	0.006%	0.000%	0.000	99.975%
1270	*11:01	*48:01	*08:02	0.006%	-0.005%	-0.002	99.975%
1270	*11:01	*48:01	*11:01	0.006%	-0.001%	0.000	99.975%
1270	*11:01	*48:01	*12:02	0.006%	0.001%	0.001	99.975%
1270	*11:01	*48:01	*14:54	0.006%	-0.003%	-0.001	99.975%
1270	*11:01	*48:01	*14:03	0.006%	0.002%	0.001	99.975%
1270	*11:01	*48:01	*14:12	0.006%	0.006%	0.198	99.975%
1270	*11:01	*51:01	*01:01	0.006%	-0.043%	-0.007	99.975%
1270	*11:01	*51:01	*04:03	0.006%	-0.018%	-0.006	99.975%
1270	*11:01	*51:01	*12:02	0.006%	-0.009%	-0.005	99.975%
1270	*11:01	*51:01	*13:02	0.006%	-0.040%	-0.007	99.975%
1270	*11:01	*51:02	*09:01	0.006%	0.003%	0.017	99.975%

1270	*11:01	*52:01	*01:01	0.006%	-0.053%	-0.009	99.975%
1270	*11:01	*52:01	*15:01	0.006%	-0.073%	-0.010	99.976%
1270	*11:01	*54:01	*01:01	0.006%	-0.034%	-0.006	99.976%
1270	*11:01	*54:01	*04:01	0.006%	0.000%	0.000	99.976%
1270	*11:01	*54:01	*08:09	0.006%	0.006%	0.120	99.976%
1270	*11:01	*54:01	*12:02	0.006%	-0.007%	-0.004	99.976%
1270	*11:01	*54:01	*14:03	0.006%	-0.005%	-0.003	99.976%
1270	*11:01	*54:01	*16:02	0.006%	-0.001%	-0.001	99.976%
1270	*11:01	*55:02	*04:01	0.006%	0.004%	0.004	99.976%
1270	*11:01	*55:02	*04:06	0.006%	-0.001%	-0.001	99.976%
1270	*11:01	*55:02	*13:02	0.006%	-0.007%	-0.003	99.976%
1270	*11:01	*55:02	*14:05	0.006%	0.001%	0.001	99.976%
1270	*11:01	*56:01	*15:02	0.006%	-0.003%	-0.003	99.976%
1270	*11:01	*56:03	*04:05	0.006%	0.003%	0.013	99.976%
1270	*11:01	*56:03	*08:03	0.006%	0.004%	0.018	99.976%
1270	*11:01	*67:01	*01:01	0.006%	0.000%	0.000	99.976%
1270	*11:01	*67:01	*08:02	0.006%	0.001%	0.001	99.976%
1270	*11:01	*67:01	*08:03	0.006%	-0.003%	-0.003	99.976%
1270	*11:01	*67:01	*11:01	0.006%	0.003%	0.003	99.977%
1270	*11:01	*67:01	*12:01	0.006%	0.002%	0.002	99.977%
1270	*11:01	*67:01	*13:02	0.006%	0.000%	0.000	99.977%
1270	*11:01	*67:01	*15:02	0.006%	-0.005%	-0.005	99.977%
1270	*11:02	*15:11	*09:01	0.006%	0.006%	0.033	99.977%
1270	*11:02	*27:04	*09:01	0.006%	0.006%	0.034	99.977%
1270	*11:02	*27:04	*12:01	0.006%	0.006%	0.035	99.977%
1270	*11:02	*27:04	*14:54	0.006%	0.006%	0.035	99.977%
1270	*11:02	*27:04	*14:05	0.006%	0.006%	0.035	99.978%
1270	*11:02	*27:04	*14:06	0.006%	0.006%	0.035	99.978%
1270	*11:02	*35:01	*04:03	0.006%	0.005%	0.032	99.978%
1270	*11:02	*40:01	*04:05	0.006%	0.005%	0.028	99.978%
1270	*11:02	*40:01	*11:01	0.006%	0.006%	0.033	99.978%
1270	*11:02	*40:02	*09:01	0.006%	0.004%	0.023	99.978%
1270	*11:02	*51:01	*14:05	0.006%	0.006%	0.033	99.978%
1270	*11:02	*54:01	*04:05	0.006%	0.004%	0.025	99.978%
1270	*11:02	*55:02	*15:01	0.006%	0.006%	0.033	99.978%
1270	*11:05	*67:01	*15:01	0.006%	0.006%	1.006	99.978%
1270	*11:43	*67:01	*15:01	0.006%	0.006%	1.006	99.979%
1270	*24:02	*07:02	*13:02	0.006%	-0.107%	-0.020	99.979%
1270	*24:02	*07:02	*14:06	0.006%	-0.020%	-0.016	99.979%
1270	*24:02	*07:02	*16:02	0.006%	-0.014%	-0.015	99.979%
1270	*24:02	*07:05	*11:06	0.006%	0.006%	0.251	99.979%
1270	*24:02	*07:31	*04:06	0.006%	0.006%	0.999	99.979%
1270	*24:02	*13:01	*04:05	0.006%	-0.054%	-0.047	99.979%
1270	*24:02	*13:01	*08:03	0.006%	-0.032%	-0.027	99.979%
1270	*24:02	*13:01	*12:01	0.006%	-0.010%	-0.008	99.979%
1270	*24:02	*13:01	*16:02	0.006%	0.002%	0.002	99.979%
1270	*24:02	*13:02	*07:01	0.006%	0.005%	0.017	99.980%
1270	*24:02	*15:01	*04:07	0.006%	-0.008%	-0.017	99.980%
1270	*24:02	*15:01	*15:02	0.006%	-0.293%	-0.039	99.980%
1270	*24:02	*15:01	*16:02	0.006%	-0.022%	-0.023	99.980%
1270	*24:02	*15:02	*12:02	0.006%	0.006%	0.120	99.980%
1270	*24:02	*15:07	*04:10	0.006%	0.001%	0.002	99.980%
1270	*24:02	*15:07	*08:02	0.006%	-0.003%	-0.006	99.980%
1270	*24:02	*15:07	*11:01	0.006%	0.000%	0.000	99.980%

1270	*24:02	*15:07	*13:02	0.006%	-0.006%	-0.010	99.980%
1270	*24:02	*15:07	*14:05	0.006%	0.002%	0.003	99.980%
1270	*24:02	*15:11	*04:10	0.006%	-0.002%	-0.002	99.980%
1270	*24:02	*15:11	*12:01	0.006%	-0.007%	-0.007	99.980%
1270	*24:02	*15:11	*13:02	0.006%	-0.014%	-0.014	99.980%
1270	*24:02	*15:11	*14:02	0.006%	0.006%	0.087	99.981%
1270	*24:02	*15:11	*15:01	0.006%	-0.022%	-0.023	99.981%
1270	*24:02	*15:18	*01:01	0.006%	-0.025%	-0.017	99.981%
1270	*24:02	*15:18	*11:01	0.006%	-0.009%	-0.006	99.981%
1270	*24:02	*15:18	*12:01	0.006%	-0.013%	-0.009	99.981%
1270	*24:02	*15:18	*12:02	0.006%	-0.004%	-0.003	99.981%
1270	*24:02	*15:18	*13:07	0.006%	0.006%	0.496	99.981%
1270	*24:02	*15:18	*14:05	0.006%	-0.005%	-0.003	99.981%
1270	*24:02	*15:25	*15:02	0.006%	0.006%	0.991	99.981%
1270	*24:02	*15:27	*15:02	0.006%	0.003%	0.047	99.981%
1270	*24:02	*15:35	*15:02	0.006%	0.005%	0.477	99.981%
1270	*24:02	*15:38	*11:01	0.006%	0.006%	0.327	99.981%
1270	*24:02	*27:04	*11:01	0.006%	0.004%	0.019	99.981%
1270	*24:02	*35:01	*13:01	0.006%	-0.011%	-0.020	99.981%
1270	*24:02	*35:64	*14:54	0.006%	0.006%	1.000	99.981%
1270	*24:02	*38:02	*09:01	0.006%	-0.009%	-0.033	99.981%
1270	*24:02	*38:02	*14:04	0.006%	0.006%	1.006	99.982%
1270	*24:02	*38:02	*14:06	0.006%	0.005%	0.016	99.982%
1270	*24:02	*38:02	*15:02	0.006%	-0.005%	-0.018	99.982%
1270	*24:02	*39:01	*04:06	0.006%	-0.034%	-0.011	99.982%
1270	*24:02	*39:01	*12:02	0.006%	-0.017%	-0.009	99.982%
1270	*24:02	*39:02	*04:03	0.006%	0.003%	0.011	99.982%
1270	*24:02	*39:02	*14:54	0.006%	0.002%	0.008	99.982%
1270	*24:02	*39:02	*15:01	0.006%	-0.002%	-0.007	99.982%
1270	*24:02	*39:04	*08:02	0.006%	0.003%	0.013	99.982%
1270	*24:02	*40:02	*04:04	0.006%	-0.002%	-0.007	99.982%
1270	*24:02	*40:02	*04:07	0.006%	-0.009%	-0.018	99.982%
1270	*24:02	*40:02	*16:02	0.006%	-0.023%	-0.024	99.982%
1270	*24:02	*40:03	*04:05	0.006%	-0.011%	-0.034	99.982%
1270	*24:02	*40:03	*04:07	0.006%	0.005%	0.015	99.982%
1270	*24:02	*40:03	*04:10	0.006%	0.003%	0.009	99.982%
1270	*24:02	*40:03	*13:02	0.006%	-0.001%	-0.003	99.983%
1270	*24:02	*40:06	*01:01	0.006%	-0.090%	-0.020	99.983%
1270	*24:02	*40:06	*04:04	0.006%	0.001%	0.005	99.983%
1270	*24:02	*40:06	*08:09	0.006%	0.005%	0.110	99.983%
1270	*24:02	*40:06	*13:02	0.006%	-0.085%	-0.019	99.983%
1270	*24:02	*40:52	*11:01	0.006%	0.006%	0.998	99.983%
1270	*24:02	*44:03	*01:01	0.006%	-0.125%	-0.022	99.983%
1270	*24:02	*44:03	*08:03	0.006%	-0.188%	-0.031	99.983%
1270	*24:02	*44:03	*15:01	0.006%	-0.169%	-0.028	99.983%
1270	*24:02	*45:01	*11:01	0.006%	0.006%	0.998	99.983%
1270	*24:02	*46:01	*01:01	0.006%	-0.097%	-0.020	99.983%
1270	*24:02	*46:01	*03:01	0.006%	0.004%	0.030	99.983%
1270	*24:02	*46:01	*04:06	0.006%	-0.050%	-0.016	99.983%
1270	*24:02	*46:01	*11:01	0.006%	-0.043%	-0.016	99.983%
1270	*24:02	*46:01	*12:01	0.006%	-0.058%	-0.016	99.983%
1270	*24:02	*46:01	*14:54	0.006%	-0.055%	-0.016	99.983%
1270	*24:02	*46:01	*14:05	0.006%	-0.029%	-0.015	99.983%
1270	*24:02	*46:01	*14:06	0.006%	-0.017%	-0.013	99.983%

1270	*24:02	*46:02	*12:02	0.006%	0.006%	0.994	99.983%
1270	*24:02	*48:01	*13:02	0.006%	-0.050%	-0.018	99.984%
1270	*24:02	*48:01	*14:02	0.006%	0.005%	0.081	99.984%
1270	*24:02	*48:01	*14:07	0.006%	0.005%	0.053	99.984%
1270	*24:02	*50:01	*13:01	0.006%	0.006%	0.495	99.984%
1270	*24:02	*51:01	*01:02	0.006%	0.005%	0.224	99.984%
1270	*24:02	*51:01	*03:01	0.006%	0.002%	0.015	99.984%
1270	*24:02	*51:01	*13:01	0.006%	-0.014%	-0.024	99.984%
1270	*24:02	*51:01	*13:02	0.006%	-0.180%	-0.034	99.984%
1270	*24:02	*51:01	*14:12	0.006%	0.005%	0.172	99.984%
1270	*24:02	*51:02	*04:05	0.006%	-0.004%	-0.021	99.984%
1270	*24:02	*51:02	*16:02	0.006%	0.005%	0.026	99.984%
1270	*24:02	*51:36	*01:01	0.006%	0.006%	1.009	99.984%
1270	*24:02	*52:01	*04:07	0.006%	-0.015%	-0.030	99.984%
1270	*24:02	*52:01	*10:01	0.006%	-0.018%	-0.032	99.984%
1270	*24:02	*52:01	*14:06	0.006%	-0.046%	-0.038	99.984%
1270	*24:02	*52:01	*16:02	0.006%	-0.034%	-0.036	99.984%
1270	*24:02	*52:11	*15:02	0.006%	0.006%	0.991	99.984%
1270	*24:02	*54:01	*04:08	0.006%	0.006%	0.997	99.984%
1270	*24:02	*54:01	*07:01	0.006%	-0.006%	-0.014	99.984%
1270	*24:02	*54:01	*08:09	0.006%	0.005%	0.100	99.984%
1270	*24:02	*55:02	*01:01	0.006%	-0.046%	-0.019	99.984%
1270	*24:02	*55:02	*04:03	0.006%	-0.019%	-0.008	99.984%
1270	*24:02	*55:02	*04:07	0.006%	0.001%	0.003	99.984%
1270	*24:02	*55:02	*13:02	0.006%	-0.043%	-0.018	99.984%
1270	*24:02	*55:02	*14:06	0.006%	-0.006%	-0.004	99.984%
1270	*24:02	*55:02	*14:29	0.006%	0.006%	0.245	99.984%
1270	*24:02	*55:10	*15:01	0.006%	0.006%	0.998	99.984%
1270	*24:02	*56:01	*04:03	0.006%	-0.003%	-0.004	99.984%
1270	*24:02	*56:01	*14:54	0.006%	-0.006%	-0.006	99.985%
1270	*24:02	*56:01	*14:05	0.006%	-0.001%	-0.001	99.985%
1270	*24:02	*58:01	*09:01	0.006%	-0.026%	-0.045	99.985%
1270	*24:02	*59:01	*01:01	0.006%	-0.034%	-0.018	99.985%
1270	*24:02	*59:01	*04:06	0.006%	-0.016%	-0.009	99.985%
1270	*24:02	*59:01	*11:01	0.006%	-0.014%	-0.007	99.985%
1270	*24:02	*59:01	*14:03	0.006%	-0.005%	-0.003	99.985%
1270	*24:02	*59:01	*14:06	0.006%	-0.003%	-0.002	99.985%
1270	*24:02	*67:01	*12:01	0.006%	-0.009%	-0.008	99.985%
1270	*24:02	*67:01	*14:54	0.006%	-0.009%	-0.008	99.985%
1270	*24:02	*67:01	*15:02	0.006%	-0.038%	-0.035	99.985%
1270	*24:02	*78:02	*04:04	0.006%	0.006%	1.006	99.985%
1270	*24:03	*51:06	*07:01	0.006%	0.006%	1.005	99.985%
1270	*24:03	*52:01	*11:06	0.006%	0.006%	0.502	99.985%
1270	*24:04	*46:01	*09:01	0.006%	0.006%	0.497	99.985%
1270	*24:04	*52:01	*08:02	0.006%	0.006%	0.496	99.986%
1270	*24:07	*35:05	*09:01	0.006%	0.006%	0.502	99.986%
1270	*24:07	*40:01	*04:05	0.006%	0.006%	0.497	99.986%
1270	*24:08	*15:01	*09:01	0.006%	0.006%	0.241	99.986%
1270	*24:08	*40:02	*08:02	0.006%	0.006%	0.248	99.986%
1270	*24:08	*44:03	*14:05	0.006%	0.006%	0.247	99.986%
1270	*24:08	*54:01	*04:05	0.006%	0.006%	0.241	99.986%
1270	*24:20	*07:02	*01:01	0.006%	0.004%	0.005	99.986%
1270	*24:20	*13:01	*14:03	0.006%	0.006%	0.008	99.986%
1270	*24:20	*13:01	*15:02	0.006%	0.005%	0.007	99.986%

1270	*24:20	*15:01	*04:03	0.006%	0.004%	0.006	99.987%
1270	*24:20	*15:01	*09:01	0.006%	-0.002%	-0.003	99.987%
1270	*24:20	*15:01	*14:06	0.006%	0.005%	0.007	99.987%
1270	*24:20	*15:18	*09:01	0.006%	0.004%	0.006	99.987%
1270	*24:20	*35:01	*08:02	0.006%	0.003%	0.005	99.987%
1270	*24:20	*35:01	*12:01	0.006%	0.004%	0.006	99.987%
1270	*24:20	*35:01	*13:02	0.006%	0.003%	0.004	99.987%
1270	*24:20	*39:04	*04:03	0.006%	0.006%	0.027	99.987%
1270	*24:20	*40:01	*09:01	0.006%	0.001%	0.001	99.987%
1270	*24:20	*40:01	*14:54	0.006%	0.005%	0.007	99.987%
1270	*24:20	*40:01	*15:01	0.006%	0.003%	0.004	99.987%
1270	*24:20	*40:02	*04:06	0.006%	0.004%	0.006	99.987%
1270	*24:20	*40:02	*08:02	0.006%	0.003%	0.005	99.987%
1270	*24:20	*40:02	*14:05	0.006%	0.005%	0.007	99.987%
1270	*24:20	*44:03	*16:02	0.006%	0.005%	0.008	99.988%
1270	*24:20	*46:01	*04:05	0.006%	0.001%	0.002	99.988%
1270	*24:20	*46:01	*12:01	0.006%	0.005%	0.007	99.988%
1270	*24:20	*48:01	*09:01	0.006%	0.003%	0.004	99.988%
1270	*24:20	*51:01	*08:02	0.006%	0.003%	0.005	99.988%
1270	*24:20	*51:01	*09:01	0.006%	-0.003%	-0.005	99.988%
1270	*24:20	*51:01	*12:01	0.006%	0.004%	0.005	99.988%
1270	*24:20	*51:01	*14:54	0.006%	0.004%	0.005	99.988%
1270	*24:20	*51:01	*14:05	0.006%	0.005%	0.007	99.988%
1270	*24:20	*52:01	*15:02	0.006%	-0.002%	-0.004	99.988%
1270	*24:20	*54:01	*15:01	0.006%	0.002%	0.003	99.988%
1270	*24:20	*55:02	*04:03	0.006%	0.005%	0.008	99.988%
1270	*24:20	*55:02	*12:01	0.006%	0.005%	0.008	99.988%
1270	*24:20	*55:02	*14:05	0.006%	0.005%	0.008	99.988%
1270	*24:20	*56:01	*08:02	0.006%	0.006%	0.008	99.989%
1270	*26:01	*07:02	*13:02	0.006%	-0.018%	-0.003	99.989%
1270	*26:01	*14:01	*07:01	0.006%	0.006%	0.251	99.989%
1270	*26:01	*15:01	*08:02	0.006%	-0.020%	-0.005	99.989%
1270	*26:01	*15:01	*11:01	0.006%	-0.011%	-0.004	99.989%
1270	*26:01	*15:01	*12:01	0.006%	-0.016%	-0.004	99.989%
1270	*26:01	*15:03	*09:01	0.006%	0.006%	0.998	99.989%
1270	*26:01	*15:07	*08:02	0.006%	0.004%	0.006	99.989%
1270	*26:01	*15:11	*08:02	0.006%	0.003%	0.003	99.989%
1270	*26:01	*15:11	*11:01	0.006%	0.004%	0.004	99.989%
1270	*26:01	*15:18	*04:05	0.006%	-0.009%	-0.007	99.989%
1270	*26:01	*15:18	*04:10	0.006%	0.003%	0.002	99.989%
1270	*26:01	*15:18	*13:02	0.006%	0.000%	0.000	99.989%
1270	*26:01	*15:18	*15:02	0.006%	-0.006%	-0.004	99.989%
1270	*26:01	*37:01	*14:54	0.006%	0.004%	0.006	99.989%
1270	*26:01	*38:01	*01:01	0.006%	0.006%	0.195	99.990%
1270	*26:01	*38:01	*09:01	0.006%	0.006%	0.193	99.990%
1270	*26:01	*39:01	*04:06	0.006%	-0.003%	-0.001	99.990%
1270	*26:01	*39:01	*04:10	0.006%	0.000%	0.000	99.990%
1270	*26:01	*39:01	*08:09	0.006%	0.006%	0.124	99.990%
1270	*26:01	*39:02	*14:54	0.006%	0.005%	0.018	99.990%
1270	*26:01	*40:01	*01:01	0.006%	-0.018%	-0.003	99.990%
1270	*26:01	*40:01	*04:03	0.006%	-0.006%	-0.002	99.990%
1270	*26:01	*40:01	*04:06	0.006%	-0.007%	-0.002	99.990%
1270	*26:01	*40:01	*08:09	0.006%	0.006%	0.122	99.990%
1270	*26:01	*40:02	*04:01	0.006%	0.000%	0.000	99.990%

1270	*26:01	*40:02	*04:04	0.006%	0.004%	0.016	99.990%
1270	*26:01	*40:02	*04:06	0.006%	-0.014%	-0.004	99.990%
1270	*26:01	*40:02	*12:05	0.006%	0.006%	0.331	99.990%
1270	*26:01	*40:03	*04:05	0.006%	0.002%	0.007	99.990%
1270	*26:01	*40:03	*08:03	0.006%	0.004%	0.010	99.990%
1270	*26:01	*40:06	*04:03	0.006%	-0.004%	-0.001	99.990%
1270	*26:01	*40:06	*14:05	0.006%	-0.001%	-0.001	99.990%
1270	*26:01	*40:06	*15:02	0.006%	-0.031%	-0.007	99.990%
1270	*26:01	*40:11	*09:01	0.006%	0.006%	0.998	99.990%
1270	*26:01	*44:03	*08:03	0.006%	-0.035%	-0.006	99.990%
1270	*26:01	*46:01	*04:03	0.006%	-0.005%	-0.002	99.990%
1270	*26:01	*46:01	*04:05	0.006%	-0.045%	-0.009	99.991%
1270	*26:01	*46:01	*08:02	0.006%	-0.010%	-0.002	99.991%
1270	*26:01	*46:01	*09:01	0.006%	-0.048%	-0.010	99.991%
1270	*26:01	*48:01	*04:07	0.006%	0.005%	0.009	99.991%
1270	*26:01	*48:01	*04:10	0.006%	0.001%	0.001	99.991%
1270	*26:01	*48:01	*12:01	0.006%	-0.002%	-0.001	99.991%
1270	*26:01	*48:01	*14:06	0.006%	0.003%	0.002	99.991%
1270	*26:01	*48:01	*15:02	0.006%	-0.017%	-0.006	99.991%
1270	*26:01	*49:01	*07:01	0.006%	0.006%	1.005	99.991%
1270	*26:01	*51:01	*04:01	0.006%	-0.001%	-0.001	99.991%
1270	*26:01	*51:01	*16:02	0.006%	-0.001%	-0.001	99.991%
1270	*26:01	*51:02	*09:01	0.006%	0.004%	0.019	99.991%
1270	*26:01	*52:01	*13:02	0.006%	-0.042%	-0.008	99.991%
1270	*26:01	*54:01	*08:02	0.006%	-0.019%	-0.004	99.991%
1270	*26:01	*54:01	*12:01	0.006%	-0.015%	-0.004	99.991%
1270	*26:01	*54:01	*14:03	0.006%	-0.004%	-0.002	99.991%
1270	*26:01	*55:02	*04:06	0.006%	0.000%	0.000	99.991%
1270	*26:01	*55:02	*09:01	0.006%	-0.021%	-0.009	99.991%
1270	*26:01	*55:02	*12:01	0.006%	-0.001%	0.000	99.991%
1270	*26:01	*55:02	*12:02	0.006%	0.002%	0.001	99.991%
1270	*26:01	*55:04	*09:01	0.006%	0.004%	0.033	99.991%
1270	*26:01	*56:01	*04:10	0.006%	0.004%	0.005	99.991%
1270	*26:01	*59:01	*09:01	0.006%	-0.015%	-0.008	99.991%
1270	*26:01	*59:01	*15:01	0.006%	-0.006%	-0.003	99.991%
1270	*26:01	*67:01	*08:02	0.006%	0.002%	0.002	99.992%
1270	*26:02	*15:01	*04:03	0.006%	0.002%	0.001	99.992%
1270	*26:02	*15:01	*04:05	0.006%	-0.014%	-0.008	99.992%
1270	*26:02	*15:01	*04:06	0.006%	0.001%	0.001	99.992%
1270	*26:02	*15:01	*04:07	0.006%	0.005%	0.010	99.992%
1270	*26:02	*15:01	*11:01	0.006%	0.002%	0.001	99.992%
1270	*26:02	*15:01	*12:02	0.006%	0.003%	0.002	99.992%
1270	*26:02	*15:01	*14:05	0.006%	0.003%	0.002	99.992%
1270	*26:02	*15:01	*16:02	0.006%	0.004%	0.005	99.992%
1270	*26:02	*15:18	*04:05	0.006%	0.002%	0.001	99.992%
1270	*26:02	*35:01	*04:03	0.006%	0.002%	0.001	99.992%
1270	*26:02	*35:01	*04:05	0.006%	-0.015%	-0.008	99.992%
1270	*26:02	*35:01	*08:03	0.006%	-0.007%	-0.004	99.992%
1270	*26:02	*35:01	*14:05	0.006%	0.003%	0.002	99.992%
1270	*26:02	*35:01	*15:02	0.006%	-0.010%	-0.006	99.992%
1270	*26:02	*39:01	*14:54	0.006%	0.004%	0.002	99.992%
1270	*26:02	*39:04	*04:05	0.006%	0.005%	0.025	99.993%
1270	*26:02	*39:04	*15:01	0.006%	0.006%	0.027	99.993%
1270	*26:02	*40:02	*08:02	0.006%	-0.001%	0.000	99.993%

1270	*26:02	*40:02	*11:01	0.006%	0.002%	0.001	99.993%
1270	*26:02	*40:02	*14:07	0.006%	0.006%	0.061	99.993%
1270	*26:02	*40:06	*04:05	0.006%	-0.006%	-0.003	99.993%
1270	*26:02	*40:06	*08:02	0.006%	0.002%	0.001	99.993%
1270	*26:02	*40:06	*13:02	0.006%	0.001%	0.001	99.993%
1270	*26:02	*46:01	*04:03	0.006%	0.003%	0.002	99.993%
1270	*26:02	*46:01	*11:01	0.006%	0.003%	0.002	99.993%
1270	*26:02	*48:01	*04:05	0.006%	-0.001%	-0.001	99.993%
1270	*26:02	*48:01	*15:01	0.006%	0.002%	0.001	99.993%
1270	*26:02	*51:01	*04:03	0.006%	0.001%	0.001	99.993%
1270	*26:02	*51:01	*04:05	0.006%	-0.018%	-0.010	99.993%
1270	*26:02	*51:01	*08:02	0.006%	-0.002%	-0.001	99.993%
1270	*26:02	*51:01	*11:01	0.006%	0.001%	0.000	99.993%
1270	*26:02	*51:01	*14:03	0.006%	0.003%	0.002	99.993%
1270	*26:02	*51:01	*16:02	0.006%	0.004%	0.004	99.993%
1270	*26:02	*54:01	*04:05	0.006%	-0.013%	-0.007	99.993%
1270	*26:02	*54:01	*09:01	0.006%	-0.014%	-0.008	99.994%
1270	*26:02	*55:02	*04:03	0.006%	0.005%	0.002	99.994%
1270	*26:02	*55:02	*08:03	0.006%	0.002%	0.001	99.994%
1270	*26:02	*56:03	*12:01	0.006%	0.006%	0.025	99.994%
1270	*26:02	*67:01	*04:10	0.006%	0.005%	0.005	99.994%
1270	*26:02	*67:01	*16:02	0.006%	0.006%	0.006	99.994%
1270	*26:03	*07:02	*09:01	0.006%	-0.013%	-0.006	99.994%
1270	*26:03	*07:02	*11:01	0.006%	0.002%	0.001	99.994%
1270	*26:03	*15:01	*08:03	0.006%	-0.009%	-0.004	99.994%
1270	*26:03	*15:01	*13:02	0.006%	-0.004%	-0.002	99.994%
1270	*26:03	*15:01	*14:03	0.006%	0.003%	0.002	99.994%
1270	*26:03	*15:07	*04:03	0.006%	0.005%	0.009	99.994%
1270	*26:03	*27:04	*04:05	0.006%	0.005%	0.025	99.994%
1270	*26:03	*35:01	*15:02	0.006%	-0.014%	-0.006	99.994%
1270	*26:03	*35:01	*16:02	0.006%	0.004%	0.004	99.994%
1270	*26:03	*37:01	*10:01	0.006%	0.006%	0.010	99.995%
1270	*26:03	*39:01	*04:06	0.006%	0.003%	0.001	99.995%
1270	*26:03	*39:01	*08:03	0.006%	-0.001%	0.000	99.995%
1270	*26:03	*39:01	*15:02	0.006%	-0.003%	-0.001	99.995%
1270	*26:03	*39:02	*09:01	0.006%	0.005%	0.018	99.995%
1270	*26:03	*40:01	*01:01	0.006%	-0.001%	-0.001	99.995%
1270	*26:03	*40:01	*04:04	0.006%	0.006%	0.021	99.995%
1270	*26:03	*40:01	*08:03	0.006%	-0.005%	-0.002	99.995%
1270	*26:03	*40:01	*11:01	0.006%	0.002%	0.001	99.995%
1270	*26:03	*40:01	*12:01	0.006%	0.001%	0.001	99.995%
1270	*26:03	*40:01	*13:02	0.006%	-0.001%	0.000	99.995%
1270	*26:03	*40:01	*14:03	0.006%	0.004%	0.002	99.995%
1270	*26:03	*40:01	*15:01	0.006%	-0.004%	-0.002	99.995%
1270	*26:03	*40:02	*04:03	0.006%	0.001%	0.000	99.995%
1270	*26:03	*40:02	*04:06	0.006%	0.000%	0.000	99.995%
1270	*26:03	*40:02	*11:01	0.006%	0.001%	0.000	99.995%
1270	*26:03	*40:02	*13:02	0.006%	-0.004%	-0.002	99.995%
1270	*26:03	*40:02	*14:03	0.006%	0.003%	0.002	99.995%
1270	*26:03	*40:02	*14:05	0.006%	0.002%	0.001	99.995%
1270	*26:03	*40:02	*14:45	0.006%	0.006%	1.007	99.995%
1270	*26:03	*40:02	*15:01	0.006%	-0.008%	-0.004	99.995%
1270	*26:03	*40:03	*15:01	0.006%	0.005%	0.015	99.995%
1270	*26:03	*40:06	*12:01	0.006%	0.002%	0.001	99.996%

1270	*26:03	*44:03	*08:03	0.006%	-0.006%	-0.003	99.996%
1270	*26:03	*44:03	*13:02	0.006%	-0.002%	-0.001	99.996%
1270	*26:03	*46:01	*12:02	0.006%	0.004%	0.002	99.996%
1270	*26:03	*48:01	*08:03	0.006%	0.000%	0.000	99.996%
1270	*26:03	*48:01	*14:05	0.006%	0.005%	0.002	99.996%
1270	*26:03	*51:01	*11:01	0.006%	0.000%	0.000	99.996%
1270	*26:03	*51:01	*12:01	0.006%	-0.002%	-0.001	99.996%
1270	*26:03	*51:01	*14:05	0.006%	0.002%	0.001	99.996%
1270	*26:03	*54:01	*08:03	0.006%	-0.009%	-0.004	99.996%
1270	*26:03	*54:01	*09:01	0.006%	-0.019%	-0.008	99.996%
1270	*26:03	*54:01	*13:01	0.006%	0.005%	0.008	99.996%
1270	*26:03	*54:01	*15:02	0.006%	-0.013%	-0.006	99.996%
1270	*26:03	*55:02	*04:05	0.006%	-0.002%	-0.001	99.996%
1270	*26:03	*55:02	*15:02	0.006%	0.000%	0.000	99.996%
1270	*26:03	*59:01	*15:02	0.006%	0.001%	0.001	99.996%
1270	*26:05	*48:01	*15:01	0.006%	0.006%	0.075	99.996%
1270	*26:05	*51:01	*04:03	0.006%	0.006%	0.075	99.996%
1270	*26:05	*51:01	*10:01	0.006%	0.006%	0.076	99.996%
1270	*26:05	*51:01	*12:01	0.006%	0.006%	0.074	99.996%
1270	*26:05	*51:01	*14:06	0.006%	0.006%	0.076	99.996%
1270	*26:05	*55:02	*04:05	0.006%	0.006%	0.074	99.996%
1270	*26:06	*15:01	*15:01	0.006%	0.006%	0.994	99.996%
1270	*26:18	*27:05	*04:04	0.006%	0.006%	1.005	99.996%
1270	*29:01	*07:05	*15:01	0.006%	0.006%	0.167	99.997%
1270	*29:01	*40:03	*12:01	0.006%	0.006%	0.167	99.997%
1270	*29:02	*13:02	*10:01	0.006%	0.006%	1.005	99.997%
1270	*30:01	*07:02	*01:01	0.006%	0.005%	0.025	99.997%
1270	*30:01	*07:05	*04:05	0.006%	0.006%	0.126	99.997%
1270	*30:01	*13:02	*04:06	0.006%	0.006%	0.028	99.997%
1270	*30:01	*13:02	*09:01	0.006%	0.006%	0.027	99.997%
1270	*30:01	*13:02	*13:01	0.006%	0.006%	0.028	99.997%
1270	*30:01	*13:02	*14:06	0.006%	0.006%	0.028	99.997%
1270	*30:01	*53:01	*03:01	0.006%	0.006%	1.005	99.997%
1270	*30:04	*14:01	*07:01	0.006%	0.006%	0.251	99.997%
1270	*30:04	*35:01	*12:01	0.006%	0.006%	0.165	99.997%
1270	*30:04	*40:06	*08:03	0.006%	0.006%	0.162	99.997%
1270	*30:04	*55:02	*14:54	0.006%	0.006%	0.165	99.997%
1270	*31:01	*07:02	*04:05	0.006%	-0.063%	-0.011	99.997%
1270	*31:01	*07:02	*09:01	0.006%	-0.067%	-0.012	99.997%
1270	*31:01	*07:02	*11:01	0.006%	-0.008%	-0.003	99.997%
1270	*31:01	*13:01	*04:05	0.006%	-0.009%	-0.007	99.997%
1270	*31:01	*13:01	*04:10	0.006%	0.004%	0.003	99.998%
1270	*31:01	*13:01	*08:03	0.006%	-0.004%	-0.003	99.998%
1270	*31:01	*15:01	*04:07	0.006%	0.002%	0.005	99.998%
1270	*31:01	*15:01	*12:01	0.006%	-0.019%	-0.005	99.998%
1270	*31:01	*15:01	*12:02	0.006%	-0.007%	-0.004	99.998%
1270	*31:01	*15:01	*14:02	0.006%	0.005%	0.084	99.998%
1270	*31:01	*15:01	*14:05	0.006%	-0.008%	-0.004	99.998%
1270	*31:01	*15:01	*15:02	0.006%	-0.068%	-0.009	99.998%
1270	*31:01	*15:07	*09:01	0.006%	-0.002%	-0.003	99.998%
1270	*31:01	*15:11	*08:03	0.006%	-0.002%	-0.002	99.998%
1270	*31:01	*15:11	*14:06	0.006%	0.005%	0.005	99.998%
1270	*31:01	*15:18	*08:02	0.006%	0.000%	0.000	99.998%
1270	*31:01	*27:04	*15:01	0.006%	0.004%	0.022	99.998%



1270	*31:01	*27:05	*08:03	0.006%	0.005%	0.065	99.998%
1270	*31:01	*35:01	*01:01	0.006%	-0.036%	-0.006	99.998%
1270	*31:01	*35:01	*12:02	0.006%	-0.007%	-0.004	99.998%
1270	*31:01	*35:01	*13:02	0.006%	-0.034%	-0.006	99.998%
1270	*31:01	*35:04	*04:11	0.006%	0.006%	1.005	99.998%
1270	*31:01	*37:01	*08:03	0.006%	0.001%	0.001	99.998%
1270	*31:01	*37:01	*11:01	0.006%	0.004%	0.007	99.998%
1270	*31:01	*39:01	*04:06	0.006%	-0.004%	-0.001	99.998%
1270	*31:01	*39:01	*11:01	0.006%	-0.003%	-0.001	99.998%
1270	*31:01	*39:01	*14:06	0.006%	0.002%	0.001	99.998%
1270	*31:01	*39:02	*04:05	0.006%	0.002%	0.009	99.998%
1270	*31:01	*39:02	*04:10	0.006%	0.005%	0.019	99.998%
1270	*31:01	*39:02	*14:06	0.006%	0.006%	0.020	99.998%
1270	*31:01	*39:04	*04:05	0.006%	0.003%	0.016	99.998%
1270	*31:01	*39:23	*09:01	0.006%	0.006%	1.000	99.998%
1270	*31:01	*40:01	*04:03	0.006%	-0.007%	-0.003	99.998%
1270	*31:01	*40:01	*04:06	0.006%	-0.009%	-0.003	99.998%
1270	*31:01	*40:01	*14:03	0.006%	-0.002%	-0.001	99.998%
1270	*31:01	*40:01	*14:06	0.006%	0.000%	0.000	99.998%
1270	*31:01	*40:02	*14:02	0.006%	0.005%	0.084	99.998%
1270	*31:01	*40:02	*14:06	0.006%	-0.003%	-0.003	99.998%
1270	*31:01	*40:03	*09:01	0.006%	0.001%	0.004	99.998%
1270	*31:01	*40:06	*04:03	0.006%	-0.005%	-0.002	99.999%
1270	*31:01	*40:06	*14:03	0.006%	-0.001%	0.000	99.999%
1270	*31:01	*44:02	*13:01	0.006%	0.006%	0.015	99.999%
1270	*31:01	*44:03	*08:02	0.006%	-0.018%	-0.004	99.999%
1270	*31:01	*46:01	*04:05	0.006%	-0.053%	-0.011	99.999%
1270	*31:01	*48:01	*04:03	0.006%	-0.001%	0.000	99.999%
1270	*31:01	*48:01	*04:05	0.006%	-0.028%	-0.010	99.999%
1270	*31:01	*48:01	*11:01	0.006%	-0.001%	0.000	99.999%
1270	*31:01	*48:01	*12:01	0.006%	-0.003%	-0.001	99.999%
1270	*31:01	*48:01	*14:54	0.006%	-0.003%	-0.001	99.999%
1270	*31:01	*48:01	*14:05	0.006%	0.001%	0.000	99.999%
1270	*31:01	*48:01	*16:02	0.006%	0.003%	0.003	99.999%
1270	*31:01	*51:01	*04:04	0.006%	0.004%	0.014	99.999%
1270	*31:01	*51:01	*04:07	0.006%	0.002%	0.003	99.999%
1270	*31:01	*51:01	*13:02	0.006%	-0.040%	-0.007	99.999%
1270	*31:01	*51:02	*04:03	0.006%	0.005%	0.027	99.999%
1270	*31:01	*51:02	*04:05	0.006%	0.003%	0.018	99.999%
1270	*31:01	*51:02	*08:02	0.006%	0.005%	0.026	99.999%
1270	*31:01	*51:02	*11:01	0.006%	0.005%	0.027	99.999%
1270	*31:01	*51:02	*15:02	0.006%	0.004%	0.020	99.999%
1270	*31:01	*52:01	*04:05	0.006%	-0.131%	-0.015	99.999%
1270	*31:01	*52:01	*13:02	0.006%	-0.050%	-0.009	99.999%
1270	*31:01	*54:01	*12:01	0.006%	-0.019%	-0.005	99.999%
1270	*31:01	*55:02	*01:01	0.006%	-0.007%	-0.003	99.999%
1270	*31:01	*55:02	*04:03	0.006%	0.000%	0.000	99.999%
1270	*31:01	*55:02	*11:01	0.006%	0.000%	0.000	99.999%
1270	*31:01	*55:02	*13:02	0.006%	-0.006%	-0.003	99.999%
1270	*31:01	*55:02	*15:01	0.006%	-0.011%	-0.005	99.999%
1270	*31:01	*56:01	*01:01	0.006%	0.001%	0.001	99.999%
1270	*31:01	*56:01	*04:03	0.006%	0.004%	0.004	99.999%
1270	*31:01	*56:01	*04:06	0.006%	0.003%	0.003	99.999%
1270	*31:01	*56:01	*08:02	0.006%	0.002%	0.003	99.999%

1270	*31:01	*56:01	*08:03	0.006%	-0.001%	-0.001	99.999%
1270	*31:01	*56:01	*11:01	0.006%	0.004%	0.004	99.999%
1270	*31:01	*56:01	*12:01	0.006%	0.003%	0.003	99.999%
1270	*31:01	*56:01	*14:54	0.006%	0.003%	0.003	99.999%
1270	*31:01	*56:01	*15:02	0.006%	-0.003%	-0.003	99.999%
1270	*31:01	*56:03	*12:01	0.006%	0.005%	0.022	99.999%
1270	*31:01	*58:01	*13:02	0.006%	0.003%	0.005	99.999%
1270	*31:01	*59:01	*09:01	0.006%	-0.019%	-0.010	99.999%
1270	*31:01	*67:01	*16:02	0.006%	0.005%	0.005	99.999%
1270	*31:11	*51:01	*04:07	0.006%	0.006%	1.005	99.999%
1270	*32:01	*15:07	*04:03	0.006%	0.006%	0.168	99.999%
1270	*32:01	*44:02	*04:06	0.006%	0.006%	0.167	99.999%
1270	*32:01	*44:02	*09:01	0.006%	0.006%	0.168	99.999%
1270	*32:01	*58:01	*13:02	0.006%	0.006%	0.168	99.999%
1270	*33:01	*82:02	*04:03	0.006%	0.006%	1.005	99.999%
1270	*33:03	*13:01	*12:02	0.006%	0.004%	0.003	99.999%
1270	*33:03	*15:01	*04:10	0.006%	-0.006%	-0.003	99.999%
1270	*33:03	*15:01	*14:54	0.006%	-0.013%	-0.004	99.999%
1270	*33:03	*15:01	*15:01	0.006%	-0.036%	-0.005	99.999%
1270	*33:03	*15:11	*04:05	0.006%	-0.004%	-0.004	99.999%
1270	*33:03	*15:18	*01:01	0.006%	0.000%	0.000	100.000%
1270	*33:03	*15:18	*04:01	0.006%	0.005%	0.005	100.000%
1270	*33:03	*35:01	*04:03	0.006%	-0.010%	-0.004	100.000%
1270	*33:03	*35:01	*08:02	0.006%	-0.018%	-0.004	100.000%
1270	*33:03	*35:01	*08:03	0.006%	-0.043%	-0.006	100.000%
1270	*33:03	*35:01	*12:01	0.006%	-0.015%	-0.004	100.000%
1270	*33:03	*39:01	*04:10	0.006%	0.001%	0.000	100.000%
1270	*33:03	*39:01	*09:01	0.006%	-0.029%	-0.008	100.000%
1270	*33:03	*39:01	*12:01	0.006%	-0.003%	-0.001	100.000%
1270	*33:03	*40:01	*09:01	0.006%	-0.048%	-0.009	100.000%
1270	*33:03	*40:02	*04:05	0.006%	-0.071%	-0.010	100.000%
1270	*33:03	*40:02	*09:01	0.006%	-0.075%	-0.011	100.000%
1270	*33:03	*40:02	*14:05	0.006%	-0.005%	-0.003	100.000%
1270	*33:03	*40:03	*09:01	0.006%	0.002%	0.007	100.000%
1270	*33:03	*40:06	*04:05	0.006%	-0.037%	-0.008	100.000%
1270	*33:03	*44:03	*04:07	0.006%	0.004%	0.007	100.000%
1270	*33:03	*44:03	*04:10	0.006%	-0.003%	-0.002	100.000%
1270	*33:03	*44:03	*12:02	0.006%	-0.002%	-0.001	100.000%
1270	*33:03	*44:03	*14:06	0.006%	0.000%	0.000	100.000%
1270	*33:03	*46:01	*09:01	0.006%	-0.043%	-0.009	100.000%
1270	*33:03	*48:01	*04:05	0.006%	-0.021%	-0.008	100.000%
1270	*33:03	*48:01	*04:10	0.006%	0.002%	0.001	100.000%
1270	*33:03	*48:01	*09:01	0.006%	-0.022%	-0.008	100.000%
1270	*33:03	*51:01	*04:10	0.006%	-0.008%	-0.004	100.000%
1270	*33:03	*51:01	*08:02	0.006%	-0.022%	-0.005	100.000%
1270	*33:03	*51:01	*08:03	0.006%	-0.050%	-0.007	100.000%
1270	*33:03	*52:01	*12:01	0.006%	-0.023%	-0.006	100.000%
1270	*33:03	*54:01	*01:01	0.006%	-0.025%	-0.004	100.000%
1270	*33:03	*54:01	*14:05	0.006%	-0.005%	-0.002	100.000%
1270	*33:03	*55:02	*04:05	0.006%	-0.018%	-0.007	100.000%
1270	*33:03	*55:02	*09:01	0.006%	-0.019%	-0.008	100.000%
1270	*33:03	*55:02	*12:01	0.006%	-0.001%	0.000	100.000%
1270	*33:03	*56:01	*14:54	0.006%	0.004%	0.004	100.000%
1270	*33:03	*58:01	*04:03	0.006%	0.005%	0.008	100.000%

1270	*33:03	*58:01	*04:10	0.006%	0.005%	0.008	100.000%
1270	*33:03	*58:01	*09:01	0.006%	0.000%	-0.001	100.000%
1270	*33:03	*58:01	*11:01	0.006%	0.005%	0.008	100.000%
1270	*33:03	*58:01	*12:01	0.006%	0.004%	0.007	100.000%
1270	*33:03	*58:01	*12:02	0.006%	0.005%	0.008	100.000%
1270	*33:03	*58:01	*14:03	0.006%	0.005%	0.008	100.000%
1270	*33:03	*67:01	*16:02	0.006%	0.005%	0.005	100.000%
1270	*33:08	*54:01	*04:05	0.006%	0.006%	0.998	100.000%
1270	*34:01	*15:01	*15:02	0.006%	0.006%	0.326	100.000%
1270	*34:01	*15:13	*12:02	0.006%	0.006%	1.005	100.000%
1270	*34:01	*40:02	*15:02	0.006%	0.006%	0.326	100.000%
1270	*66:01	*41:02	*07:01	0.006%	0.006%	1.005	100.000%
1270	*68:01	*39:05	*04:07	0.006%	0.006%	1.005	100.000%
1270	*68:02	*14:02	*15:01	0.006%	0.006%	1.005	100.000%

The data based on the pedigree study from 4,743 families (17,325 members).

<sup>a</sup>Linkage disequilibrium value

<sup>b</sup>Relative linkage disequilibrium value

<sup>c</sup>Cumulative coverage of the Japanese population by HLA homozygous donors

Supplementary Table 9. Pla-iPSC clone list.

Clone	Source				Gene expression				Copy				Differentiation		
	Origin	Age	Sex	Race	Factors	RT-PCR	Microarray	Bisulfite	number	Karyotyping	HLA	STR	Teratoma	Dopa	RPE
404C-2	HDF1388	36	F	C	Y4	√	√		√				√	√	√
409B-2	HDF1388	36	F	C	Y4	√	√	√	√	√		√	√	√	√
414C-2	HDF1388	36	F	C	Y4	√	√	√	√	√		√	√	√	√
418C-1	TIG114	36	M	J	Y4	√			√	√			√		
421C-1	TIG107	81	F	J	Y4	√			√	√			√		
426C-2	HDF1554	77	F	C	Y4	√			√	√					
427D-4	HDF1437	56	M	C	Y4	√			√	√			√		
428C-2	TIG120	6	F	J	Y4	√			√	√			√		
451F-3	DP74	16	F	J	Y4	√	√		√	√			√	√	√
453F-2	DP94	16	F	J	Y4	√			√	√	√		√		
454B-1	DP74	16	F	J	Y1	√	√		√	√			√		
454C-2	DP74	16	F	J	Y2	√			√	√			√		
454D-1	DP74	16	F	J	Y3	√			√	√			√		
454E-2	DP74	16	F	J	Y4	√	√	√	√	√	√	√	√	√	√
454F-1	DP74	16	F	J	T2					√					
457C-1	DP74	16	F	J	Y4	√	√		√	√	√	√	√	√	ND

ND, we could not detect RPE differentiation in our differentiation protocol (n = 1).

Supplementary Table 10. Primer list for quantitative PCR.

<i>OCT3/4</i> (CDS)	CCC CAG GGC CCC ATT TTG GTA CC
	ACC TCA GTT TGA ATG CAT GGG AGA GC
<i>OCT3/4</i> (pla)	CAT TCA AAC TGA GGT AAG GG
	TAG CGT AAA AGG AGC AAC ATA G
<i>KLF4</i> (CDS)	ACC CAT CCT TCC TGC CCG ATC AGA
	TTG GTA ATG GAG CGG CGG GAC TTG
<i>KLF4</i> (pla)	CCA CCT CGC CTT ACA CAT GAA GA
	TAG CGT AAA AGG AGC AAC ATA G
<i>SOX2</i> (CDS)	TTC ACA TGT CCC AGC ACT ACC AGA
	TCA CAT GTG TGA GAG GGG CAG TGT GC
<i>SOX2</i> (pla)	TTC ACA TGT CCC AGC ACT ACC AGA
	TTT GTT TGA CAG GAG CGA CAA T
<i>L-MYC</i> (CDS)	GCG AAC CCA AGA CCC AGG CCT GCT CC
	CAG GGG GTC TGC TCG CAC CGT GAT G
<i>L-MYC</i> (pla)	GGC TGA GAA GAG GAT GGC TAC
	TTT GTT TGA CAG GAG CGA CAA T
<i>LIN28</i> (CDS)	AGC CAT ATG GTA GCC TCA TGT CCG C
	TCA ATT CTG TGC CTC CGG GAG CAG GGT AGG
<i>LIN28</i> (pla)	AGC CAT ATG GTA GCC TCA TGT CCG C
	TAG CGT AAA AGG AGC AAC ATA G
<i>GAPDH</i>	ACC ACA GTC CAT GCC ATC AC
	TCC ACC ACC CTG TTG CTG TA
<i>EBNA-1</i>	ATC AGG GCC AAG ACA TAG AGA TG
	GCC AAT GCA ACT TGG ACG TT
<i>FBXO15</i>	GCC AGG AGG TCT TCG CTG TA
	AAT GCA CGG CTA GGG TCA AA

CDS; for detection of coding sequence.

pla; for detection of plasmid vector-derived expression.