Supplementary Tables

Supplementary Table 1. Significant Correlations between Black or African American and Asian Race with Knowledge or Previous Tissue Donation (n ≤ 276)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Race**  | **Black or African American**  | **Asian**  |  |  |
| **Knowledge about stem cells**  | **Yes % (n)**  | **Yes% (n)**  | **Test (χ2)** | **p-value**  |
| Prior to taking this survey did you know that stem cells make exact copies of themselves? | 69.3 (52) | 85.7 (30) | 3.375 | 0.051 |
| Prior to taking this survey did you know that stem cells can be converted into different types of cells? | 62.7 (47)  | 85.7 (30) | 6.036 | 0.011 |
| Prior to taking this survey did you know about induced pluripotent stem cells? | 19.2 (14) | 45.7 (16) | 8.304 | 0.005 |
| **Previous donation of tissue samples**  |   |   |   |   |
| Have you had any surgery before  | 6.7 (5) | 2.9 (1) | 7.054 | 0.029 |
| Have you had a skin biopsy or similar procedure before? | 24 (18)  | 5.7 (2) | 5.915 | 0.052 |

Supplementary Table 2. Knowledge about Health Disparities, Global Health and Pharmacogenomics All Respondents (n ≤ 263)

|  |  |  |  |
| --- | --- | --- | --- |
|   | Yes % (n)  | no % (n)  | Total number of respondents to question  |
| Prior to taking this survey did you know people living in different regions of the world have different health risks?  | 97.7 (257) | 2.3 (6) | 263 |
| Did you know people of certain ethnic groups share common genetics that make them at risk of developing certain diseases?  | 96.6(253) | 3.4 (9) | 262 |
| Prior to taking this survey did you know that people of different ethnicity income and neighborhood have different health risks?  | 94.8 (246) | 1.6 (4) | 250 |
| Prior to taking this survey did you know that stem cells can be used for global health research?  | 74 (195) | 26.1(69)  | 264 |
| Prior to taking this survey did you know that people of different ethnic groups can have different responses to the same medication?  | 73.5 (191)  | 26.5 (69) | 260 |
| Prior to taking this survey did you know that stem cells can be used for health disparities research?  | 70.56 (163) | 29.4 (68) | 231 |
| Prior to taking this survey did you know about pharmacogenomics?  | 51.1(138) | 46.9 (122) | 260 |

Supplementary Table 3. Attitudes about Health Disparities, Global Health and Pharmacogenomics All Respondents (n ≤ 263)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Likely % (n)  | Neutral % (n)  | Unlikely %(n)  | Total number of respondents  |
| Do you think designing medications for individuals is a good idea?  | 78.9 (206) | 15.7 (41) | 5.36 (14) | 261 |
| Do you think designing medications that work best for certain ethnic groups is a good idea? | 82.7 (216) | 13.0 (34) | 4.2 (11) | 261 |
| Would you take medication that was specifically designed for you?  | 88.4 (229) | 9.27 (24) | 2.32 (6) | 259 |
| Would you take medication that was specifically designed for your ethnic group?  | 81.8 (212) | 12.4 (32) | 5.79 (15) | 259 |
| Would you donate cells which can be converted into iPSCs for pharmacogenomics research?  | 63 (164) | 23.6 (61) | 13.1(34)  | 259 |
| Would you donate blood that can be converted into iPSCs for pharmacogenomics research?  | 59.6 (155)  | 25.8 (67) | 14.6 (38) | 260 |
| Would you donate cells which can be converted into iPSCs for health disparities research? | 65.5 (173) | 24.2 (64) | 10.2(27) | 264 |
| Would you donate cells which can be converted into iPSCs for global health research?  | 64.0 (167) | 25.3 (66) | 10.7 (28)  | 261 |

Supplementary Table 4. Attitudes About Informed Consent, Privacy of Genetic Information and Return of Research Results all Respondents (n ≤ 264)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Likely % (n)**  | **Neutral % (n)**  | **Unlikely %(n)**  | **Total number of respondents**  |
| Are you concerned that people can find out genetic information unique to you if you donate cells?  | 35 (92) | 20.6 (54) | 44.3 (116)  | 262 |
| Are you concerned that your employer may find out genetic information about you?  | 30 (79) | 21.7 (57) | 48.3 (127) | 263 |
| Are you concerned that insurance agencies may found out genetic information about you?  | 48.1 (126) | 20.1 (55) | 30.9 (81)  | 262 |
| If researchers find out information in your DNA such as your risk to develop a disease such as cancer, would you like the researchers to tell you about their results?  | 77 (203) | 13.7 (36)  | 9.12 (24)  | 263 |
| Do you believe that informed consents protect your rights?  | 61.4 (162) | 24.4 (67) | 13.26 (35)  | 264 |

Supplementary Table 5 Studies Reporting Generation of Ethnically Diverse Induced Pluripotent Stem Cells

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year Published**  | **Reference**  | **Study objective**  | **Sample size**  | **Sample type**  | **Ethnicity/Race or Country** | **Outcome/Conclusion** |
| 2015 | Chang EA, Tomov ML, Suhr ST et al. Derivation of Ethnically Diverse Human Induced Pluripotent Stem Cell Lines. Sci Rep, 5, 15234 (2015). | Derive xenofree ethnically diverse-human iPSC\* lines from fibroblasts obtained from individuals and characterize the lines under a uniform platform for comparative analysis.  | 5 | Foreskin fibroblast derived iPSCs | 1 African American 2 Asian 1 Caucasian 1 Hispanic  | The xenofree iPSC lines represent a well-characterized valuable resource with potential for use in future research in drug discovery or clinical investigations. |
| 2017 | Panopoulos AD, D'Antonio M, Benaglio P et al. iPSCORE: A Resource of 222 iPSC Lines Enabling Functional Characterization of Genetic Variation across a Variety of Cell Types. Stem Cell Reports, 8(4), 1086-1100 (2017). | Develop iPSCORE resource: a collection of systematically derived and characterized iPSC lines from ethnically diverse individuals that allows for both familial and association-based genetic studies. | 222 | Skin fibroblast iPSC | 147 European Ancestry 4 African American 30 Asian 15 Hispanic | The iPSCORE resource could be used to investigate the molecular mechanisms underlying the genetic risk for a wide variety of traits and diseases. |
| 2017 | Pashos EE, Park Y, Wang X et al. Large, Diverse Population Cohorts of hiPSCs and Derived Hepatocyte-like Cells Reveal Functional Genetic Variation at Blood Lipid-Associated Loci. Cell Stem Cell, 20(4), 558-570.e510 (2017). | Recruit a multi-ethnic cohort of healthy volunteers and use their tissue to generate iPSCs and hepatocyte-like cells for genome-wide mapping of expression quantitative trait loci and allele-specific expression. | 91 | Foreskin fibroblast derived iPSC | 40 African American 47 European American, 2 Asian, 2 Hispanic  | This study demonstrated an iPSC-based experimental framework to discover functional variants and genes contributing to complex human trait |
| 2018 | Park S, Gianotti-Sommer A, Molina-Estevez FJ et al. A Comprehensive, Ethnically Diverse Library of Sickle Cell Disease-Specific Induced Pluripotent Stem Cells. Stem Cell Reports, 8(4), 1076-1085 (2017). | Generate and characterize a diverse library of sickle-cell-disease-specific iPSCs from patients of different ethnicities. | 54 | Blood derived iPSC | 28 African American 14 Saudi Arabia 12 Brazil  | The study created a resource for the study of sickle cell disease, including novel haplotype-specific polymorphisms that affect disease severity, as well as designed and employed CRISPR/Cas gene editing tools to correct the sickle hemoglobin (HbS) mutation. |
| 2018 | Lee S, Huh JY, Turner DM et al. Repurposing the Cord Blood Bank for Haplobanking of HLA-Homozygous iPSCs and Their Usefulness to Multiple Populations. Stem Cells, 36(10), 1552-1566 (2018). | Establish a haplobank of iPSCs, homozygous for the 10 most frequent HLA-A, -B,-DRB1 haplotypes in the Korean population. | 10 | Cord blood derived iPSC  | 10 Korean  | The study successfully established a haplobank of iPSCs, homozygous for the 10 most frequent HLA-A, -B,-DRB1 haplotypes in the Korean population. |

Supplementary Table 5 Continued Studies Reporting Generation of Ethnically Diverse Induced Pluripotent Stem Cells

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year Published**  |  | **Reference**  | **Study objective**  | **Sample size**  | **Sample type**  | **Ethnicity/Race or Country** | **Outcome/Conclusion** |
| 2018 |  | Gao X, Yourick JJ, Sprando RL. Generation of nine induced pluripotent stem cell lines as an ethnic diversity panel. Stem Cell Res, 31, 193-196 (2018). | Use self-replicative RNA reprogramming technology to generate nine iPSC lines from endothelial progenitor cells (EPCs) derived from blood samples of three different ethnicities | 9 | Blood derived iPSCs | 2 Black 5 non-Hispanic white 2 Latino or Hispanic  | The iPSC lines developed can beused as a panel for ethnic-related toxicological applications. |
| 2019 |  | Sarkar AK, Tung PY, Blischak JD et al. Discovery and characterization of variance QTLs in human induced pluripotent stem cells. PLoS Genet, 15(4), e1008045 (2019). | Use a genome-wide single cell RNA-seq (scRNA-seq) approach to identify expression variance quantitative trait loci (vQTLs). | 53 | iPSCs obtained from the NHGRI Sample Repository for Human Genetic Research at the Coriell Institute for Medical Research. | 53 Blacks of Yoruba ethnicities  | The study found that common genetic variation can alter the level of average gene expression in human tissues, and through changes in gene expression have downstream consequences on cell function, human development, and human disease |
| 2020 |  | Bisogno, L.S., et al., Ancestry-dependent gene expression correlates with reprogramming to pluripotency and multiple dynamic biological processes. Sci Adv, 2020. 6(47). | Generate and compare transcriptomic data from 72 dermal fibroblast–iPSC pairswith consistent variation in reprogramming efficiency | 72 | Dermal fibroblast derived iPSCs | 36 African American 36 White American  | The study provided a comprehensive investigation of how ancestry and transcriptome heterogeneity can affect reprogramming of fibroblasts to iPSCs |

\*iPSC – induced pluripotent stem cell