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NHLBI Next Gen Consortium partners with WiCell to distribute over 1,500 well-characterized, novel cell lines for use in disease research

The National Heart, Lung, and Blood Institute (NHLBI)-funded Next Gen Consortium has designated WiCell as the distributor of the human pluripotent stem cell lines created as part of the NHLBI's Next Generation Genetic Association Studies.

The Next Generation Genetic Association Studies (Next Gen) program is a five-year, $80 million program to investigate functional genetic variation in humans by assessing cellular profiles that are surrogates for disease phenotypes. To achieve this, researchers from multiple institutions across the U.S. (Boston University, Harvard University, University of Pennsylvania, Johns Hopkins University, Medical College of Wisconsin, Stanford University, UC San Diego, Scripps Research Institute) were awarded grants to derive iPS cell lines from more than 1,500 individuals representing various conditions (left ventricular hypertrophy, cardiovascular disease, pulmonary hypertension, diabetes, sickle cell disease, etc.) as well as healthy controls (including some from the Framingham Heart Study) for use in functional genomic ('disease in a dish') research. This extensive panel includes a diverse set of age, gender and ethnic backgrounds, and therefore will be an invaluable tool for evaluations across demographics. Further enhancing the utility of these cell lines are data sets such as phenotyping, GWAS, genome sequencing, gene expression and -omics analyses (e.g., lipidomic, proteomic, methylomic) that will be made available along with the cell lines.

With so much invested in the creation and characterization of these cell lines, the NHLBI's vision included providing researchers access to the cell lines and their associated characterization data, as well as ongoing technical support to ensure cultures can be established in receiving laboratories. To this aim, the NHLBI Next Gen Consortium has designated WiCell to serve as the repository and distributor of the cell lines.

Upon receipt from the depositing institutions, WiCell will make the cell lines available to researchers. Genotype, phenotype and clinical data available for the donors of each cell line will be available through the NIH National Center for Biotechnology Information's dbGAP and linked to each cell line on the WiCell website to aid researchers in making cell line decisions. Prior to distribution, all cell lines will be tested for mycoplasma and sterility, and karyotype and identity will be confirmed. Fees collected from investigators requesting materials fund the characterization and rebanking of in-demand lines and support the continued preservation of all materials deposited in the WiCell Stem Cell Bank.

"The NIH is committed to ensuring that the scientific community benefits from the many valuable cell lines created through the Next Generation Association Studies," said Robert Drape, executive director of WiCell. "WiCell's distribution of these cell lines will ensure that they are easily accessible and that high-quality cell lines are available to the research community around the world."

"It is anticipated that the availability of these cells will stimulate functional genomics research that uses human cells derived from well-characterized donors," said Dr. Cashell Jaquish, program director of the Next Gen Consortium, NHLBI. "Ultimately, discoveries using these cells will contribute to improvements in the prevention and treatment of common heart, lung and blood disorders."

For more information on the Next Generation Genetic Association Studies, contact Dr. Cashell Jaquish at **jaquishc@mail.nih.gov**. For more information on the availability of cell lines, contact WiCell at **info@wicell.org**.

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QUICK FACTS

- WiCell to distribute iPS cell lines derived from more than 1,500 individuals
- Conditions represented include left ventricular hypertrophy, cardiovascular disease, pulmonary hypertension, diabetes and sickle cell disease, as well as healthy controls
- Encompasses a diverse set of age, gender, and ethnic backgrounds
- Data such as phenotyping, GWAS, genome sequencing, gene expression, and -omics analyses will be available through the NIH NCBI's dbGAP and linked to each cell line on WiCell's website
- Sign up to be notified when these cell lines are available: **www.wicell.org/subscribe**