

December 16, 2013

**Topic:** Request for Supplemental Funds to obtain differentiated stem cells for the ENCODE project to collectively profile.

To Whom This May Concern,

We are writing to request supplemental funds to acquire specific cell lines to be used for analyses by the Encyclopedia of DNA Elements (ENCODE) Consortium. The ENCODE Project is seeking human samples that are consented for genomic analyses and permit Open-Access to the data generated by various sequencing and array based assays. The Resources Working Group within the ENCODE project has identified the following sources from which samples can be cultured in large and distributed to the ENCODE production labs. We are seeking supplemental funds detailed for each cell line source listed below.

#### **I. H7-Derived – Cardiomyocytes (University of Washington Core Facility)**

Background:

- WA07 (H7) is an NIH-approved stem cell line originating out of the Wi-Cell Institute.
- Karyotype: Normal 46 chromosomes
- Sex: Female

The UW Cardiac Tissue Engineering Core Facility (M. Laflamme, Director) generates large numbers of stem cell derived cardiomyocytes. The facility can generate batches of 200-300 million cardiomyocytes at a time, at a predicted > 90% purity harvested on the 21<sup>st</sup> day of differentiation. The facility uses Troponin-T as a cardiomyocyte marker and performs periodic karyotype tests in addition to morphology to phenotype the cells.

Cell Numbers and Assays Proposed for Each Cell Type:

- Bernstein Lab: Needs 50 million cross-linked cells to perform ChIP-seq with 14-17 different histone epitopes.
- Stamatoyannaopoulos Lab: Needs 40 million cells to perform a DNase sequencing assay.
- Gingeras Lab: Needs 10 million flash-frozen cells to perform long RNA-seq, small RNA-seq, and RAMPAGE assays.
- Myers Lab: Needs 7 million flash-frozen cells to perform RRBS, Methyl-450 array, genotyping array, microRNA-seq, and Nanostring assays.
- Wold Lab: Needs 1,000 flash-frozen cells to perform low-input RNA-seq.

Total cells required: ~120 million cells per replicate x 2 replicates.

Costs: For 120 million cells per replicate x 2 replicates = ~ 240 million H7-derived cardiomyocytes = \$33,172 direct costs, \$17,479 indirect costs = \$50,651 Total Cost

