



June Baik

Started T32 in 2021

Research:

Establishment of a non-human primate myogenic model for enabling cell-based therapy for muscle degenerative disorders. Transplanting pluripotent stem cell-derived (PSC) myogenic progenitors in a large animal model is critical to evaluate feasibility of cell-based therapies for muscular dystrophy. To address this, 3 *Macaca fascicularis* iPSC cell lines (Cy0657#5, CyMN.1 and CyMN.2) and applied conditional expression of PAX7, which resulted in robust in vitro myogenic differentiation. Whole transcriptome analysis of NHP-PSC cultures undergoing myogenic specification confirmed the successful sequential induction of mesoderm, paraxial mesoderm and myogenic lineages, respectively. Pilot in vivo studies with CyMN.2 Pax7-induced myogenic progenitors show that these cells contribute to muscle regeneration upon transplantation into cardiotoxin-injured muscles of immunocompromised mice. Testing in *Macaca fascicularis* recipients will provide insights to define key aspects associated with cell delivery in larger muscles and investigate the interaction between donor cells and the host immune system.

Coursework completed:

None

Conference Presentations:

- 2021 Hebbel Research Day (Virtual presentation)
- 2021 Frontiers in Myogenesis Conference (Poster presentation)

Publications: (since starting on the T32)

None

Publications in process:

- Garay BI, Givens S, Stanis N, Magli A, Yucel D, Abrahante JE, Goloviznina NA, Soliman HAN, Dhoke N, **Baik J**, Kyba M, van Berlo JH, Ogle B, Perlingeiro RCR. (2021) "Inhibition of mitogen-activated protein kinase pathway enhances maturation of human iPSC-derived cardiomyocytes". under revision
- **Baik J**, Ortiz-Cordero C, Kiley J, Perrin E, Maufort JP, Graham M, Magli A, and Perlingeiro RCR. (2022) "Establishment of a non-human primate myogenic model for enabling cell-based therapy for muscle degenerative disorders". in progress

Awards:

Travel Award for the 2021 Frontiers in Myogenesis Conference