

NIH POSTDOCTORAL FELLOWSHIP on CNS Inflammation

A Post-doctoral fellowship is available immediately at the **Keck Center for Collaborative Neuroscience and the Stem Cell Research Center at Rutgers University** to study the effects of immunomodulation on traumatic injury in the central nervous system using stem cells. We are testing the hypothesis that soluble factors secreted by mesenchymal stem cells (MSC) act at a distance to promote recovery following spinal cord injury (SCI) by suppressing inflammation during secondary injury. We have encapsulated human MSC in alginate and found that capsules with cells inhibit inflammation after implantation into SCI (Biotechnol Bioeng. 11:2747-58, 2011). The encapsulated MSC promoted anti-inflammatory M2 and inhibited pro-inflammatory M1 macrophages using immunodetection and RT-PCR to analyze changes in expression in the SCI site and in the cerebrospinal fluid. We are also assessing MSC effects on recovery of function after SCI including walking behavior in long-term studies. Studies are ongoing to optimize the encapsulation process further, to analyze molecular mechanisms of MSC on inflammation in SCI, and to test whether pre-activation of MSC improves outcomes further after SCI.

We are looking for an enthusiastic and energetic scientist to work on this interdisciplinary project focusing on encapsulation of human MSC in alginate to analyze their functions in co-cultures with macrophages in culture and on inflammation after rat SCI. The successful candidate should have experience in several of the following areas, biomaterials, cell culture, RT-PCR analyses, ELISA, FACS, and immunostaining, and will collaborate with a multidisciplinary group of scientists. Experience with animals is not necessary but may be beneficial.

ELIGIBILITY: Candidates for this T32 fellowship (http://www.njbiomaterials.org/info_postdocs.htm) must be US citizens or permanent residents. The position is available starting Jan 1, 2015 and applications will be considered as soon as they are submitted.

Key words: cytokines, inflammation, trauma, biomaterials, encapsulation, cell culture, RT-PCR, ELISA, FACS, immunofluorescence, confocal microscopy, apoptosis, necrosis, spinal cord injury, histology, neuroscience, stem cells, transplantation, lumbar puncture, locomotion, allodynia, mRNA, proteins, chemokine, macrophages, microglia, neurons, astrocytes, cerebrospinal fluid.

Submit Applications: Applicants should submit complete CV including all training, research experience, and publications including thesis title, along with names and the names and contacts information (email and telephone) for 3 referees to Dr. Martin Grumet at mgrumet@rci.rutgers.edu.