CD105 Deficiency in Mouse Aorta-derived Mesenchymal Stem Cells Promotes An Enhanced Inflammatory Response to Lipopolysaccharide.

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Recent Fluctuation of Atlantic Horseshoe Crab (*Limulus polyphemus*) Egg Density on Plumb Beach, Brooklyn, NY. Kelvin Gutierrez and Christina Colon, Kingsborough Community College, Brooklyn NY.

Plumb Beach is a favored location for horseshoe crabs to spawn during May through July. It was hypothesized that there will be an increase in egg density on both the eastern and western sides in 2016, compared to previous years when there was a downward trend likely exacerbated by Super storm Sandy. Estimating horseshoe crab eggs is done to monitor spawning activity and assess the amount of forage available to migratory birds (Pooler et al. 2003). Horseshoe crabs have been around for 450 million years. Their blood makes them essential to the biomedical industry and their eggs are important food for migratory shore birds and fish. To monitor egg density, grids were created at the intertidal zone wherein samples were collected randomly, at 5cm and 20cm deep, every two weeks from May to August. Eggs were brought to the lab to be sorted then counted. Data showed a decrease of 12,692 compared to 2015 (41,834), however, 2016 counts (29,142) were higher than 2012 – 2014. Also, the high survival (17% of hatchlings) was the highest since 2011, thus my hypothesis was in part supported. Furthermore, on the western beach (restored in 2012) there was an increase in density (2,029) and much higher survival than previously observed (33%). The increased density and survival on the restored side supports my hypothesis, and is an indication that the beach restoration was successful. The high survival on the eastern beach is a sign that the habitat is healthy, while reduced egg counts may be due in part to the migration of crabs to the restored western beach; however only time will tell. This work was supported by grant 2R25GM06003 of the Bridges Program of NIGMS and grant 0537171091 of the CSTEP Program of the NYS Department of Education.

Comparison of N-methyl-d-aspartate NR2B Subunit Proportions Between Control, Gonadectomized, and Hormone Replaced Male Rats. Catherine Hernandez1 and Mary F. Kritzer2, Nassau Community College and Stony Brook University, NY.

The prefrontal cortex (PFC) mediates cognitive functions that are dependent on dopamine (DA) input coming from the ventral tegmental area (VTA). PFC regulates how much DA it receives. Previous studies show that androgens regulate PFC/DA networks and DA sensitive PFC behaviors by modulating glutamate drive over PFC-to-VTA projections. My study asked whether androgens exert this control by influencing the subunit composition of glutamate receptors on PFC neurons that project to VTA. Specifically I examined the effects of gonadectomy and hormone replacement on NR2B NMDA receptor subunit. In situ hybridization was used to visualize NR2B subunit mRNA. This was combined with retrograde fluorescent labeling of PFC-to-VTA projections neurons. I quantified the proportions of these neurons that contained NR2B mRNA. Results indicated that NR2B subunit is not necessarily hormone regulated in the adult brain. The proportions of the remaining subunits should be quantified to determine the possible influence androgen may have on the subunit composition of NMDA receptor and DA-dependent PFC behaviors.

Regulation of Gene Expression by HRE’s Under Chemically Induced Hypoxic Mimic Condition. Alberto Herrera, George Coricor and Jane L. Ko. Seton Hall University, South Orange, NJ.

Hypoxia is a condition of inadequate oxygen supply, which can induce cell death. Neuronal cells treated with DFO resulted in hypoxic mimic conditions. Our lab reported previously that the outcome of such a treatment did result in the decrease of cell viability. However, there were still surviving neurons. The surviving cells did not exhibit significant morphological changes under confocal microscopy analysis using annexin-V-FLUOS and propidium iodide staining, indicating that they were not at apoptotic or necrotic stages. These surviving neurons, therefore, developed adaptive responses under hypoxic challenge. Several changes were observed, including an