

Molecular sex differences in CGRP-expressing noradrenergic neurons in the mouse SubCV and A5

Abstract: While neuroscience research has seen a decline in sex omission in recent years, sex bias towards male subjects persists, increasing the current demand for research which classifies sex as an experimental variable. NE is a neurotransmitter that modulates multiple diverse behaviors and psychological processes throughout the central and peripheral nervous systems. Sex-differential expression of the norepinephrine (NE) system has been shown to produce functional impacts on various stress-related psychiatric disorders. NE is affected by many genes that innervate its axons including calcitonin-gene related peptide (CGRP). Here we identify subpopulations of NE neurons, defined by their expression of CGRP, which has a unique role in the onset of migraines and headaches, among other functions. Using an immunofluorescence antibody protocol and focusing specifically on the SubCV and A5 brain regions in both female and male mice, we found that CGRP is not coexpressed with NE in the SubCV or the A5 subpopulations. Additionally, we found no significant sex differences in CGRP expression in either subpopulation of interest.