D121 Molecular Genetic Analysis of Non-neuronal SNAP-25 Genes in *C. elegans*

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SNARE is vesicle fusion machinery conserved from yeast to human. SNAP-25(synaptosomal associated protein of 25 kDa) is a t-SNARE protein at neuronal synapse. Recently, non-neuronal homologs of SNAP-25 were reported in mammals. We previously showed that *C. elegans* has not only an otholog of SNAP-25, but also a non-neuronal SNAP-25 homolog, *nns-1*(non-neuronal SNAP-25 homolog-1). We now found another new SNAP-25 homolog, *nns-2*, from database search. The *nns-2* gene is on X chromosome, and contains 10 exons and 9 introns, two of which are unusually large. We cloned a 706 bp long *nns-2* cDNA encoding the putative Nns-2 protein by RT-PCR. Northern analysis showed that *nns-2* transcript is 1.4 kb long. In order to determine its expression pattern, we made *nns-2* promoter::lacZ fusion construct, and made transgenic *C. elegans*. We found that Nns-2 is expressed in 20 intestinal cells at all larval stage. We are trying to examine the biological function of *nns-2* by double stranded RNA interference experiments.

D122 Localization of ErbB2 and ErbB3, the Receptors for Neuregulin Family, During Sciatic Nerve Regeneration

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Neurotrophic Factors play critical roles on proliferation and differentiation of neurons and Schwann cells during the nerve development and regeneration. Neuregulin family (NRGs) includes glial growth factor (GGF), acetylcholine receptor inducing activity (ARIA), neu differentiation factor (NDF), and heregulin (HRG)) which are alternatively spliced products of single gene and their receptors are ErbB family, the transmembrane tyrosine kinases. We previously reported that ErbB2 receptor is phosphorylated at SHC-binding sites after sciatic nerve injury (J. Neurosci. 1997). We investigated here whether the expression and the localization of NRGs and ErbB receptors are regulated during the sciatic nerve regeneration. Expression of both ErbB2 and ErbB3 proteins increased after injury and were immunostained in the proliferating Schwann cells. Their mRNAs were localized in the neuronal cell bodies of spinal cord and DRG as well as in Schwann cells of sciatic nerves by using *in situ PCR*. The NRG isotypes were also detected in proliferating Schwann cells as well as in regrowing nerve axons when RT-PCR was performed using exon-specific NRG primers. These results suggest that the interaction of NRGs and ErbB receptors transduce signals to control the proliferation and differentiation of Schwann cells and axonal regrowth by paracrine and/or autocrine regulation during the sciatic nerve regeneration.

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