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APPENDIX 1: Example, sorted abstract file

All abstracts should be numbered and these numbers must be the same as in the printed abstract supplement. Lectures should be numbered L1, L2, L3…Lx. Oral communications O1, O2 etc, Poster presentations P1, P2 etc and abstracts from Special symposia S1, S2 etc

P1

ROLE OF SOMATOSTATINERGIC INTERNEURONS IN THE HIPPOCAMPUS

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Aims: The inhibition of hippocampal pyramidal cells occurs via inhibitory interneurons making GABAergic synapses on distinct segments of the postsynaptic membrane. **Methods:** We immunocytochemically identified numerous interneurons expressing the kappa opioid receptor in the stratum oriens of the CA1 area and in the hilus of the dentate gyrus of the rat brain. From among the known inhibitory interneuron subtypes, somatostatin and neuropeptide Y immunoreactive hippocampal interneurons have similar morphology and distribution. **Results:** The functional significance of the differential targeting of the postsynaptic membrane of pyramidal cells by d-opioid receptor-expressing cells was made clear by studies examining the role of somatostatinergic (Oriens-Lacunosum Moleculare, known as O-LM) interneurons modulating the activity of pyramidal neurons. The axons of these interneurons selectively innervate the distal apical dendrites of the pyramidal cells and here the inhibitory O-LM cell synapses overlap with excitatory input originating from the entorhinal cortex and the thalamus. O-LM neurons are activated after CA1 pyramidal neuron discharge only (feedback, or recurrent inhibitory cells). **Conclusion:** This suggest that somatostatin containing inhibitory interneurons in the stratum oriens, when activated, can selectively reduce the excitatory input from entorhial cortex to CA1, therefore directing the informational flow to the molecular layer of the dentate gyrus, facilitating the classic trisynaptic hippocampal circuit.

O1

JUXTAPARANODAL AXONAL MEMBRANE ISOLATED FROM MYELINATED AXONS CONTAINS GLIAL SIGNALING MOLECULES

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Aims: The first objective was to isolate a membrane fraction enriched in juxtaparanodal associated proteins. The next objective was to determine the growth factor composition and signaling capacities of this membrane fraction. The paranodal fraction, isolated from AEF using rabbit anti-CASPR-2 and magnetic beads linked to goat anti-rabbit antibody, was enriched 2-3 fold in CASPR-2 and 4-5 fold in neuregulin (relative to starting AEF). The paranodal fraction also stimulated in vitro Schwann cell MAP kinase activation more than 10-fold relative to whole AEF. Furthermore, identical distribution of the Relative Specific Activity (RSA) for contactin, neuregulin and BDNF, indicates co-localization in membrane vesicles. **Methods:** The molecular composition of specialized nodal domains in the myelinated axon was investigated by the use of an Axolemma Enriched Fraction (AEF). **Results:** We present data showing the presence of nodally associated proteins in AEF including: CASPR 1&2, contactin, neurofascin, potassium and sodium channels, neuregulin and Brain Derived Neurotrophic Factor (BDNF). These data are consistent with the view that axon-glia signaling molecules are localized in the paranodal and juxtaparanodal regions of the axolemma and are ideally situated for signaling to ensheathing glia via the cytoplasm-filled lateral loops. **Conclusion:** These data provide valuable information regarding bi-directional communication between axons and Schwann cells.Tight axo-glial interactions at nodal regions make them logical communication centers for signaling molecule localization. Further refinement of this protocol will allow characterization of signaling proteins contained in the nodal and paranodal regions of the myelinated axons.