

SONA

SOUTHERN ONTARIO NEUROSCIENCE ASSOCIATION

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SOUTHERN ONTARIO NEUROSCIENCE ASSOCIATION

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MONOCLONAL ANTIBODY SV16 RECOGNIZES SYNAPTIC VESICLES IN HUMAN CNS TISSUE. A.V. Plioplys Surrey Place Centre and Div. Neurology, Dept. Pediatrics, Hospital for Sick Children; 2 Surrey Place, Toronto, Ontario, M5S 2C2.

The neurobiologic causes of mental deficiency are poorly understood. There have been several reports claiming abnormalities in the developmental profile of cerebral cortical synaptic density in individuals with mental impairment. These reports have used electron microscopic techniques - methods which are elaborate and time consuming. To further study synaptic density abnormalities in human CNS tissue a light microscopic technique would be preferable. Monoclonal antibody (mab) SV16 was developed by immunizing mice with fetal rat CNS homogenates. Mab SV16 produces an immunoreactive staining pattern on mouse and rat CNS tissue sections compatible with the distribution of synaptic vesicles. Electron microscopy confirms mab SV16 synaptic vesicle staining. On Western blots of rodent CNS tissue a 16 Kdalton polypeptide is recognized. When applied to autopsy - derived formalin - fixed human CNS tissue a similar immunohistochemical staining pattern results. By contrast mab Q155 provided by Dr. Hawkes and a panel of monoclonals provided by Dr. Matthews, which recognize different synaptic vesicle related molecular weight polypeptides, and react in a similar fashion on rodent tissue, do not react with human tissue. Thus, selected synaptic vesicle mabs maybe useful in studying proposed synapse density abnormalities in human CNS diseases.