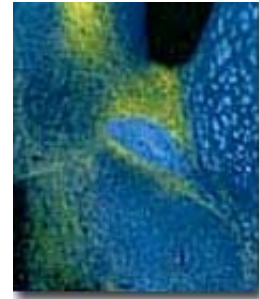




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Research Interests

This laboratory is concerned with the biochemistry and function of synaptic vesicles. We are currently investigating the mechanism and regulation of glutamate uptake into, and release from, synaptic vesicles in the brain. We are also concerned with its potential role in neuropathophysiology. We have recently isolated a potent, endogenous inhibitory protein which reduces glutamate accumulation into synaptic vesicles. We are studying the physiological role, the mechanism of action, and the mechanism of genesis of this inhibitory protein. In addition, we are engaged in developing potent non-peptide inhibitors of glutamate uptake.

More recently, we have been investigating the role of glucose metabolism on glutamate uptake into and release from synaptic vesicles. We have obtained evidence indicating that ATP produced on the surface of synaptic vesicles by glycolytic enzymes, rather than ATP synthesized in mitochondria, is harnessed for accumulating glutamate into synaptic vesicles.

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