The project on synaptic transmission in the squid giant synapse was supported from years 1989 to 1994, and was discontinued due to a drastic reduction of funding to this branch of the Air Force Biological Research Program. Over the period of its tenure many fundamental discoveries were reported from the work supported by this grant. Among them (1) The discovery of P type calcium channels as the main trigger for transmitter release in invertebrates and vertebrate synapses, to include mammalian forms; (2) The first demonstration of calcium microdomains in presynaptic terminals and their role in synaptic transmitter release. In addition, measurements were also done of the maximum concentration attained at these microdomains and the time course for the calcium concentration profile; (3) The mechanisms by which botulinum and tetanus toxin block synaptic release; (4) Finally, the role of high inositol phosphate moieties in synaptic release were also studied.
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3. Llinás, R. Calcium and presynaptic voltage as modulators of the synaptic release process. In: Neuromuscular Junction, eds. L.


9. Llinás, R., Sugimori, M., and Silver, R.B. Microdomains of high 
calcium concentration in a presynaptic terminal. Science, 256:677-679 

Stanley, E.F. FMRFamide-related peptides potentiate transmission at 

11. Llinás, R., Sugimori, M., Hillman, D., and Cherksey, B. 
Distribution and functional significance of the P-type, voltage-
dependent Ca\(^{2+}\) channels in the mammalian central nervous system. 

12. Llinás, R., Sugimori, M., and Silver, R.B. Presynaptic calcium 
concentration microdomains and transmitter release. J. Physiology 

13. Lin, J.W., and Llinás, R. Depolarization activated potentiation of the 

Llinás, R. Activity-dependent inhibition of neurotransmitter release 

15. Llinás, R., Sugimori, M., and Silver, R. Localization of calcium 
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synapse. In: Molecular and Cellular Mechanisms of 
Neurotransmitter Release, eds.,


