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## MODULATION OF OXIDANT STRESS BY ANTIOXIDANT IN NEUROTRANSMISSION

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To determine the effect of oxidant stress on releasable [ $^3\text{H}$ ]GABA in mouse hippocampal slices, a constant flux of peroxy radical generator 2,2-azobis (2-amidinopropane) hydrochloride [AAPH] was continuously perfused to induce stress on mouse hippocampal slice. Using this *in vitro* model of inhibitory neurotransmission, it was found that 10 mM AAPH in normal Krebs-Ringer-Bicarbonat buffer can stimulate [ $^3\text{H}$ ]GABA release. However, on addition of known antioxidants and free radical scavengers such as 10 mM of vitamin C, 10 mM of EPC-K (a water-soluble phosphate diester linkage of vitamin C and vitamin E) and 0.5% Bio-normalizer (a health food supplement manufactured by Sun-O International Inc., Gifu, Japan) in the perfusing medium, the excitatory release of [ $^3\text{H}$ ]GABA was significantly inhibited. This finding suggests that peroxy radicals are involved in presynaptic excitation and excessive depolarization of neurons which however can be aborted by antioxidants. Therefore, antioxidants appear to play a major role in modulating neurotransmission.