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Poster Sessions

Anti-stress effect of Humanin, a biologically active peptide

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Humanin (HN) is a secretory 24-residue peptide. HN was first identified as a cytoprotective factor that suppresses neuronal death in Alzheimer's disease and exerts the activity through cell surface receptors. Subsequent studies revealed that HN can reverse disease-associated change in cellular functions of various types of tissues including brain, muscle, and pancreas. It is also reported that HN increases mitochondrial ATP production in some cell types. The level of HN in circulation decreases age-dependently in rodents and human. However physiological roles of HN is largely unknown. In this study, we assessed the effect of HN against stress in mice. We gave immobilization stress to young male mice and measured their blood glucose levels over time. The immobilization stress caused increase in the glucose level after 30 min to 90 min of the treatment. Intraperitoneal injection of S14G-HN, a highly potent HN derivative, attenuated the stress-induced increase in the glucose level. S14G-HN alone showed no significant change in the glucose level which was similar to that of non-stressed mice. A neuroprotection-defective HN mutant did not affect the stress-induced increase in the blood glucose level, suggesting that this anti-stress effect of HN is mediated by a receptor.