【 발 생 】

3-2-1. Effects of 20-Hydroxyecdysone and Serotonin on Neurite Growth and Survival of the Silk Moth Antennal Lobe Neurons in Cell Culture

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Effects of 20-hydroxyecdysone and serotonin on the morphological development and survival of antennal lobe neurons dissociated from day-2 pupal brains of the silk moth Bombyx mori were investigated through cell cultures. Four morphologically distinct neuronal types could be identified; unipolar, bipolar, multi-polar and projection neurons. Projection neurons of the antennal lobe extended their neurites remarkably through stimulation of 20-HT in vitro, whereas multi-polar neurons were stimulated to form their new branches from primary neurites by serotonin. At day-5, antennal lobe neurons in lower titers of 20- HT had significantly higher survival rates than those in higher titers. Neurons cultured for 7 days at different levels of 20-HT generally showed significantly lower survival rates than neurons cultured for 5 days under same conditions.