

**BDNF Promotes Neurite Growth and
Survival of Antennal Lobe Neurons from the Silk Moth *Bombyx mori*
*in vitro***

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Brain-derived neurotrophic factor (BDNF) induced a significant neurite extension of antennal lobe (AL) neurons from the silk moth *Bombyx mori* in culture on laminin/ concanavalin A-coated dishes, in comparison with smaller effect of 20-hydroxyecdysone (20-HE). But the effect for neurite extension by 5-hydroxytryptamine (5-HT) could not be found. A significant increase in the number of new primary branches from the principal neurites of AL neurons was also shown in culture with BDNF and 5-HT, but not with 20-HE. The BDNF stimulated to outgrow more increased number of branches than the 5-HT. In culture of AL neurons with BDNF, 20-HE and 5-HT, they showed the highest survival rate in culture with BDNF. Results from the western blot and ELISA assay suggested that BDNF, transported from brain neurons to corpora allata, might be secreted into hemolymph. Immunostaining of 5-stage pupal brains with anti-BDNF antibody revealed presence of four pairs of large median neurosecretory cells and six pairs of small lateral neurosecretory cells of which axons were innervated to the corpora allata.