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[Image PDF (597K)] [References]

Actions of Benzaldehyde Hydrazones and Semicarbazones on Biogenic Amine Receptors in the Silkworm *Bombyx mori*

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Four hydrazones (HZs) and six semicarbazones (SCZs) of substituted benzaldehydes were synthesized and examined for their ability to control insect adenylate cyclase through their interaction with biogenic amine receptors. Among the compounds synthesized, two with a hydroxyl group at the 4-position of the phenyl moiety, HZ-01 and SCZ-03, were found to reduce the basal levels of cAMP in head membrane homogenates of fifth instar larvae of the silkworm *Bombyx mori*. The semicarbazone SCZ-03 dose-dependently attenuated not only basal but also forskolin-stimulated cAMP levels. Tyramine (TYR) and dopamine (DPM) also produced a dose-dependent reduction in basal cAMP levels. DPM and TYR receptor antagonists abolished the attenuating effects of SCZ-03. These findings suggest that SCZ-03 acts as a non-selective agonist for DPM and TYR receptors to inactivate adenylate cyclase in *B. mori* larvae.

Keywords:
tyramine receptor, octopamine receptor, dopamine receptor, adenylate cyclase, cyclic AMP, *Bombyx mori*

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