

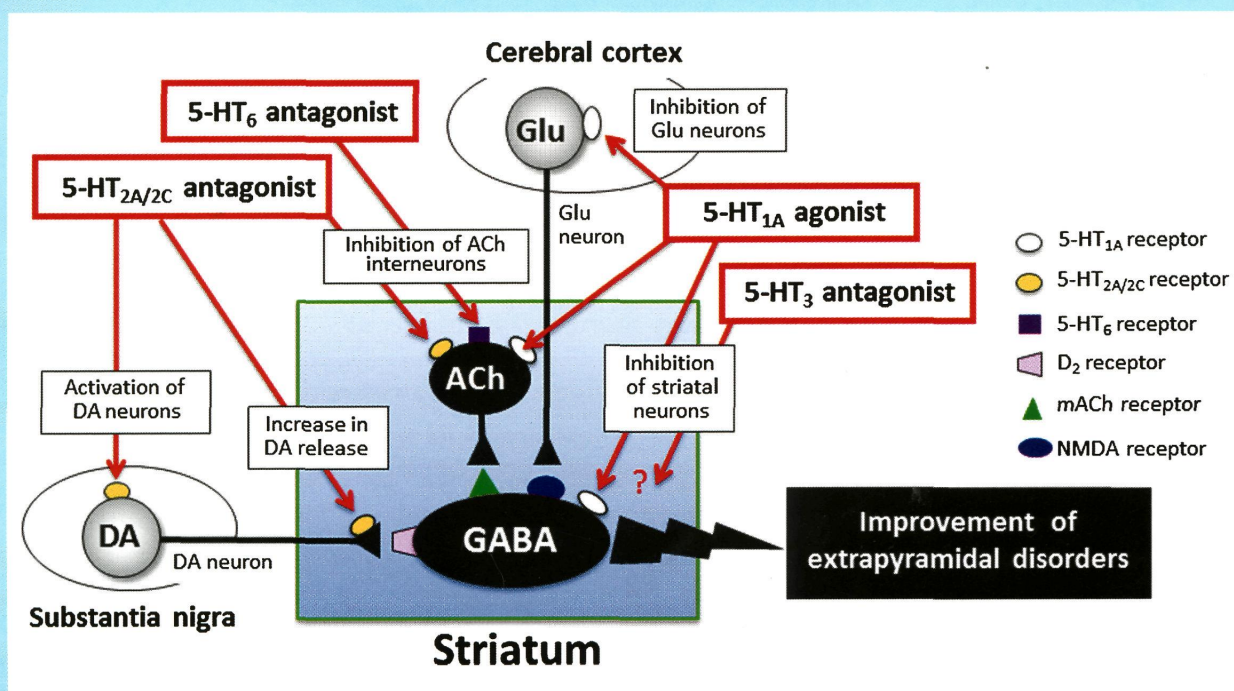
# Biological and Pharmaceutical Bulletin

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Cover Figure Serotonergic Regulation of Extrapyramidal Disorders

pp. 1396-1400

**Highlighted Paper** • Novel SARM, YK11, Accelerates Myogenic Differentiation  
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**Current Topics** Recent Advances in 5-Hydroxytryptamine (5-HT) Receptor Research: How Many Pathophysiological Roles Does 5-HT Play via Its Multiple Receptor Subtypes?



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**About the cover:** Figure illustrates the roles of 5-HT receptor subtypes in modulating extrapyramidal motor disorders. Stimulation of 5-HT<sub>1A</sub> receptors reduces the activity of striatal neurons directly by hyperpolarizing the GABAergic medial spiny neurons or indirectly by inhibiting the acetylcholinergic interneurons, which leads to improvement of extrapyramidal disorders. Microinjection of 5-HT<sub>1A</sub> agonist into the cerebral cortex also improves extrapyramidal symptoms by inhibiting glutamatergic cortico-striatal neurons. Blockade of 5-HT<sub>2A/2C</sub> receptors alleviates extrapyramidal disorders by increasing dopamine release in the striatum and by activating dopamine neurons in the substantia nigra. Antagonism of 5-HT<sub>3</sub> or 5-HT<sub>6</sub> receptors also improves extrapyramidal disorders while 5-HT<sub>4</sub>, 5-HT<sub>5</sub> or 5-HT<sub>7</sub> receptors are inactive. DA: dopamine, Glu: glutamate, ACh: acetylcholine, mACh: muscarinic acetylcholine. See the article by Ohno *et al.* on page 1396 of this issue.

\* *Highlighted Paper selected by Editor-in-Chief*

The selection is based upon originality, scientific contributions, methodological pertinence, and composition.