Modulation of ligand-gated ion channels by antidepressants and antipsychotics.

Abstract:

It is generally accepted that antidepressants and antipsychotics mediate their therapeutic effects via specific interaction with processes related to synaptic neurotransmission in the central nervous system. Besides their well-known classical mechanisms of action, antidepressants and antipsychotics show widely unknown effects, which might also contribute to the pharmacological profile of these agents. There is growing evidence that an interaction of these drugs with allosteric modulatory sites of ligand-gated ion channels (LGICs) might represent a yet unknown principle of action. Such interactions of psychopharmacological drugs with LGICs might play an important role both for the therapeutic efficacy and the side effect profile of these agents. In this review, we focus on the direct interaction of antidepressants and antipsychotics with LGICs, which may provide a basis for the development of novel psychopharmacological drugs.