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Novel Aspects of Molecular Targets for Antidepressant Drugs

Guest Editor:

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Message from the Guest Editor

Major depressive disorder (MDD) is the third leading cause of disability worldwide and can have a tremendous impact on quality of life. For half a century, clinical antidepressants have acted with therapeutic effect by regulating monoamine transmitters, inhibiting the reuptake of 5- HT and NE, and increasing the levels of 5- HT, NE, or DA in the presynaptic membrane. But problems still exist. Recently, rapid-acting antidepressants, represented by ketamine, have received much attention. The possible mechanism is related to blocking NMDA receptors and activating AMPA receptors. This research topic investigates glutamatergic receptors such as NMDA, APMA, and GluR and the related fast-acting antidepressant mechanisms. The contents mainly include the three aspects: (1) use of artificial intelligence and computational design approaches to discover powerful fast-acting compounds that bind to the glutamate receptor; (2) novel approaches, including CRISPR/cas9 and multi-omics methods, have been used to explore the biological mechanism; and (3) new multi-target antidepressants (including melatonin receptor agonists, GABA receptor modulators, etc.), medicinal plants and their extracts.

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Editor-in-Chief

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Message from the Editor-in-Chief

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