Abstract:

Neuroplasticity is the capacity of the brain to change its structure in response to sensory stimuli and internal processes. First this work introduces psychoplastogens, molecules with therapeutic potential that are capable of specifically influencing neuroplastic processes. It then describes the mechanism of neuroplastic effects of one of the groups of psychoplastogens, the serotonergic psychedelics. Serotonergic psychedelics have been found to alter gene expression and induce epigenetic changes. They increase the synthesis of proteins involved in extracellular matrix disruption or proteins involved in synapse remodelling. This enables them to open up critical periods or to compensate for neuroplastic deficits in some psychiatric disorders, such as Major depression disorder. In behavioral terms, this equates to an increased ability to adapt to one´s environment and to the disruption of ingrained behavioral and thought processes.

Keywords: neuroplasticity, psychoplastogens, extracelulární matrix, psychedelics, major depressive disorder