

Supplementary Information

The Effects of Statins on Neurotransmission and Their Neuroprotective Role in Neurological and Psychiatric Disorders

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Table S1. Preclinical effects of statins on neurotransmission and neuroprotection.

Statin	Effect	References
All statins	inhibition of nuclear factor kappa-light-chain-enhancer of activated B cells (NF-κB)	Sierra et al. [61]
	decreasing the structural damage of the cytoskeleton	Wang et al. [125]
		Deveau et al. [140],
	increasing serotonin reuptake by serotonin reuptake transporter (SERT)	Johnson-Anuna et al. [141]
	anti-oxidant activity	Shishehbor et al. [145]
	inhibition of lymphocytes by blocking the function of antigen-1 leukocytes (LFA-1)	Weitz-Schmidt et al. [147]
Atorvastatin	blocking T-cells activation	Bu et al. [148]
	decreasing GluN2B glutamate receptor upregulation	Gutierrez-Vargas et al. [106]
	improvement the adhesion protein complex N-methyl-D-aspartate receptor (NMDAR) associated with postsynaptic density protein 95 (PSD-95)	Gutierrez-Vargas et al. [106]
	influence of Akt kinase activation in promoting cell survival and in turn promote synaptic plasticity	Gutierrez-Vargas et al. [106]
	recovering of the actin cytoskeleton and stabilizes microtubules	Gutierrez-Vargas et al. [126]
	decreasing level of brain-derived neurotrophic factor (BDNF)	Gutierrez-Vargas et al. [106]

Simvastatin	inhibition of NMDAR1	Yan et al. [63]
	reduction of beta-amyloid (A β) concentration in nerve cells	Fassbender et al. [64]
	increasing the amount of acetylcholine (Ach) in brain tissue of rats	El-Dessouki et al. [100]
	decreasing oxidative stress	Campos-Martorell et al. [128]
	inhibition of the production of pro-inflammatory cytokines by monocytes	Ferro et al. [146]
Lovastatin	activation of a disintegrin and metalloproteinase domain-containing protein 10 (ADAM10)	Kojro et al. [65]
	increasing in the activity of the phospholipid transporter (PLTP)	Kojro et al. [65]
	reducing the concentration of plasmaphosphorylated tau181 (p-tau181)	Kojro et al. [65]
Pravastatin, simvastatin, and atorvastatin	lowering C-reactive protein (CRP) level	Jialal et al. [144]
