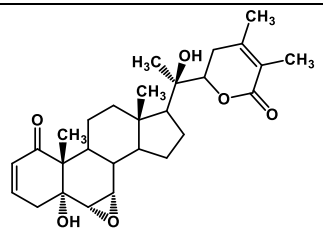
Withanolide A

Name of the Phytochemical	**Withanolide A**
Chemical Structure	
Botanical Source	Withania somnifera
CAS Number	32911-62-9
Functional Activity	• It has antioxidant and neuroprotective activity • It helps to promote neurite outgrowth at 1 µM in cultured neurons • Reverses hypoxia-mediated neurodegeneration by restoring hypoxia-induced glutathione depletion in the hippocampus of mice
Key References	**1.** Withanolide A Prevents Neurodegeneration by Modulating Hippocampal Glutathione Biosynthesis during Hypoxia. **PLoS One, 2014, 9, 1-17** **2.** Profiling withanolide A for therapeutic targets in neurodegenerative diseases. **Bioorg Med Chem., 2019, 27, 2508-2520** **3.** Natural Withanolides in the Treatment of Chronic Diseases. **Adv Exp Med Biol., 2016, 928, 329-373** **4.** Neuritic regeneration and synaptic reconstruction induced by withanolide A. **British Journal of Pharmacology, 2005, 144, 961-971** **5.** Withanolide derivatives from the roots of Withania somnifera and their neurite outgrowth activities. **Chem.Pharm.Bull.(Tokyo), 2002, 50 , 760-765** 6. β-Amyloid1-42, HIV-1Bα-L (clade B) infection and drugs of abuse induced degeneration in human neuronal cells and protective effects of ashwagandha (Withania somnifera) and its constituent Withanolide A. **PLoS One, 2014, 9, 1-23**

	7. *Attenuation of Glutamate-Induced Excitotoxicity by Withanolide-A in Neuron-Like Cells: Role for PI3K/Akt/MAPK Signaling Pathway. Mol Neurobiol., 2018, 55, 2725-2739* *8. Withanolide A extends the lifespan in human EGFR-driven cancerous Caenorhabditis elegans. Exp Gerontol, 2018, 104, 113-117* ***9.*** *Molecular docking, QSAR and ADMET studies of withanolide analogs against breast cancer. Drug Des Devel Ther., 2017, 11, 1859-1870*