Acetyl-L-carnitine is a derivative of carnitine that enables functions of CoA and plays a significant role in the maintenance of energy homeostasis. Acetyl-L-carnitine exhibits antidepressant, neuroprotective, analgesic, and antinociceptive activities. In vivo, acetyl-L-carnitine acetylates p65, inducing NF-κB-mediated upregulation of mGluR2 receptors. In neuron-like PC12 cells, acetyl-L-carnitine inhibits 3-NPA-produced cellular stress responses and neurotoxicity. Acetyl-L-carnitine normalizes brain levels of neurotrophic factors such as NGF, GDNF, and artemin in animal models of neuropathy. Additionally, acetyl-L-carnitine exhibits some degree of antinociceptive benefit through indirect modulation of M1 muscarinic acetylcholine receptors (mAChRs). In cellular models of Alzheimer’s disease, this compound stimulates α-secretase activity and metabolism of amyloid precursor protein (APP).

**References**


**Caution:** This product is intended for laboratory and research use only. It is not for human or drug use.