

Neurotrophins/Neurotrophic Cytokines

Functional Name	Synonyms	Main Neurotrophic Functions (Partial List)	Disease/Disorder (Partial List)	Receptors
β-NGF (beta-Nerve Growth Factor)	NGF-β	Supports survival and maintenance of neurons in the sensory and sympathetic nervous systems	Alzheimer's, Parkinson's, diabetic peripheral neuropathy, cardiovascular diseases	LNGFR, gp140/trk, p75NTR
BDNF (Brain Derived Neurotrophic Factor)	Abrineurin	Supports survival and maintenance of neurons in the central nervous system and peripheral nervous systems	Parkinson's, diabetic peripheral neuropathy, ALS, Huntington's	LNGFR, gp145/trkB, p75NTR
NNT-1/BCSF-3 (Novel Neurotrophin-1/ B-Cell Stimulating Factor-3)	Cardiotrophin-like cytokine (CLCF1)	Supports survival of motor and sympathetic neurons in chick embryos	Multifocal neuronal hypoplasia, neurodegenerative eye diseases (glaucoma), CISS (Cold-Induced Sweating Syndrome)	LIFR-β, gp130
NT-3 (Neurotrophin-3)	NGF-2, HGNF	Promotes growth and survival of new and existing neurons	Diabetic peripheral neuropathy, periodontal diseases	Trk, TrkB, TrkC, p75NTR
NT-4 (Neurotrophin-4)	NT-4/NT-5	Promotes survival of peripheral receptors sensory sympathetic neurons	Huntington's, glaucoma	TrkB, p75NTR
GDNF (Glial-Derived Neurotrophic Factor)	ATF-1	Promotes dopamine uptake, survival and morphological differentiation of midbrain neurons	Parkinson's, ALS, Huntington's	RET/GFR1α-4α
MANF (Mesencephalic Astrocyte-Derived Neurotrophic Factor)	ARMET, Arginine-Rich Protein (ARP)	Promotes survival, growth and function of dopamine specific neurons	Parkinson's, cancer	Unknown at time of printing
CDNF (Cerebral Dopamine Neurotrophic Factor)	ARMETL1	Promotes survival, growth and function of dopamine specific neurons	Parkinson's	Unknown at time of printing
CNTF (Ciliary Neurotrophic Factor)	None	Promotes survival of ciliary neurons, primary sensory neurons, motor neurons, basal forebrain neurons, and type 2 astrocytes	ALS, Huntington's	CNTFR-α
IL-6 (Interleukin-6)	26 kDa protein, IFN-b2, B-cell Differentiation Factor (BCDF), BSF-2, HPGF, HSF, MGI-2	Involved in inflammation associated with Alzheimer's disease	Diabetes, atherosclerosis, Alzheimer's, depression, rheumatoid arthritis, systemic lupus, cancer, MS	IL-6Rα, gp130
Oncostatin M	OSM	Involved in the regulation of neurogenesis	Rheumatoid arthritis, atherosclerosis, cancer, TEL/JAK2 disease	LIFR-high affinity, gp130-low affinity
Cardiotrophin-1	CT-1	Enhances survival of different neuronal populations	Motor Neuron Diseases (MND), cardiovascular diseases	gp130, LIFR
IL-11 (Interleukin-11)	AGIF (Adipogenesis Inhibitory Factor)	Survival of oligodendrocytes, involved in inflammation associated with MS	Atherosclerosis, MS	IL-11Rα, gp130
LIF (Leukemia Inhibitory Factor)	Differentiation-stimulating factor, D-factor, Melanoma-Derived LPL inhibitor (MLPLI)	Promotes stimulation of differentiation of cholinergic nerves	Systemic lupus, cancer, epidermal hyperplasia in ALS	LIFR
Pleiotrophin	PTN, Heparin Affin Regulatory Protein (HARP), Heparin-Binding Growth Factor-8 (HBGF-8), Osteoblast-Specific Factor 1 (OSF-1)	Promotes neurite outgrowth	Angiogenesis, Parkinson's, cancer	ALK
Midkine	MK, NEGF-2	Promotes neurite outgrowth	Alzheimer's, cancer	ALK
Neurturin	NTN, NRTN	Promotes survival of sympathetic and sensory neurons	Parkinson's	Prefers RET/GFR2α
Artemin	ART, ARTN, Enovin, Neublastin	Promotes survival of sympathetic, neural crest, placodally-derived sensory neurons, and dopaminergic midbrain neurons	Chronic pain	Prefers RET/GFR3α
Persephin	PSP, PSPN	Promotes survival of ventral midbrain dopaminergic neurons and motor neurons after sciatic nerve oxotomy	Alzheimer's	Prefers RET/GFR4α