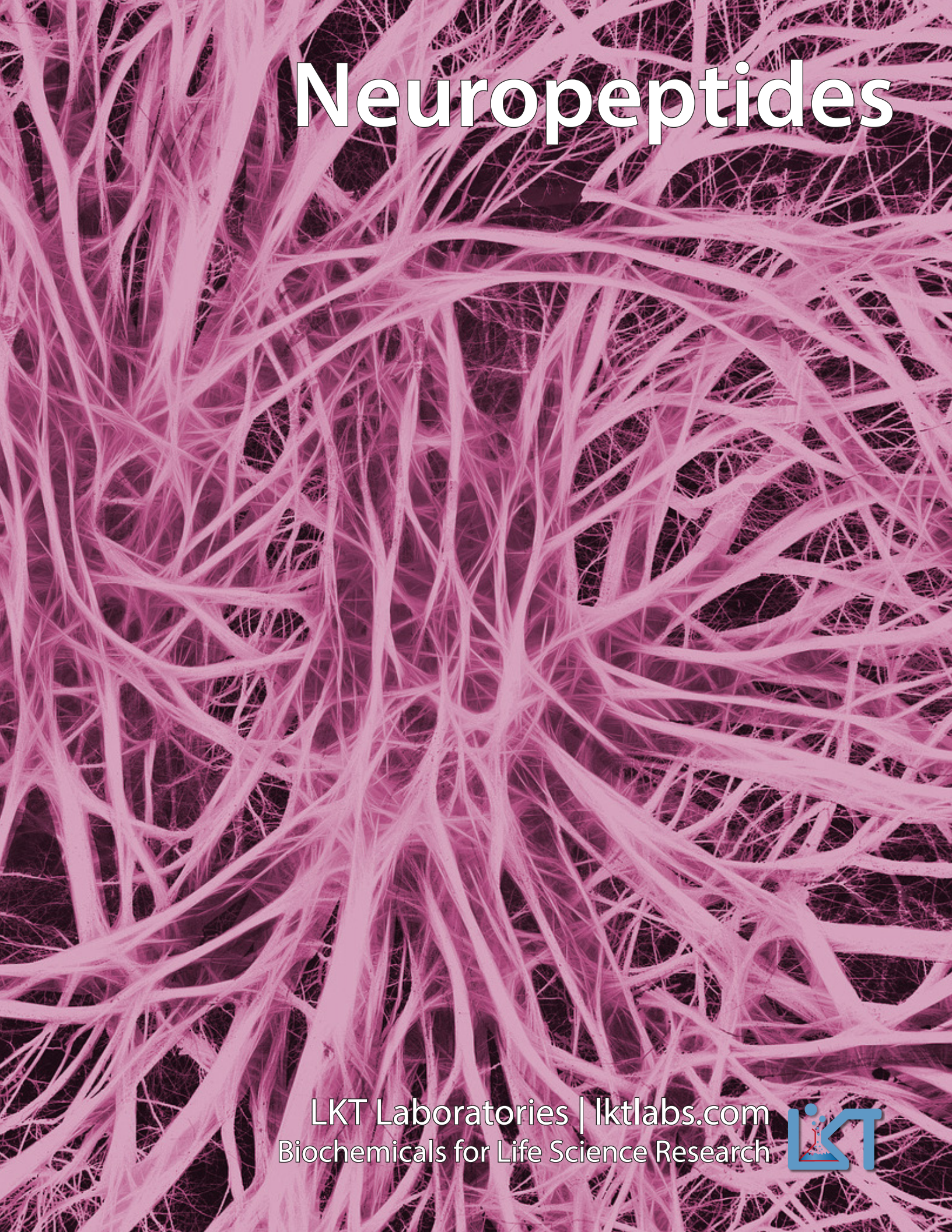
Neuropeptides



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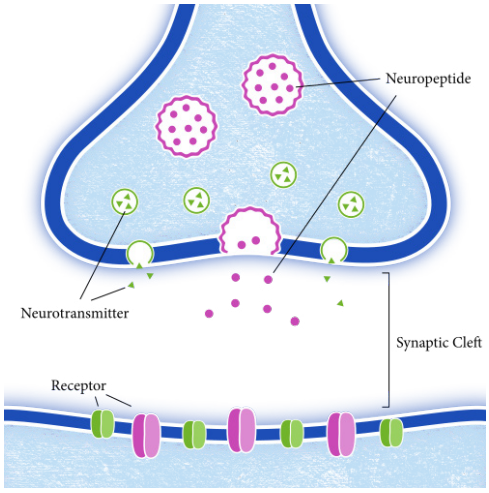
Biochemicals for Life Science Research

Neuropeptides

Neuropeptides are bioactive signaling molecules produced by neurons. Signaling usually takes place locally, where a neuropeptide is released by one neuron and binds to a G-protein coupled receptor on the surface of a neighboring neuron. Though neuropeptides are frequently co-released with a primary neurotransmitter, they differ from neurotransmitters in their size (anywhere from 3-36 amino acids in length) and are not recycled back into the cell once secreted. Extracellular processing by peptidases may inactivate the neuropeptide or increase its affinity for a particular receptor.

Neuropeptides exhibit regulatory effects over a wide variety of behavioral and physiological processes. These include addiction, metabolism, feeding regulation, learning, reproduction, pain response, and social behaviors. They play a role in internal stress factors such as depression and anxiety. Abnormalities in neuropeptide signaling can contribute to the development of neurological disease. By studying the relationship between external factors and neuropeptide structure, their mechanisms, and their biological effects, researchers can develop new therapies and attain a more comprehensive understanding of human biology.

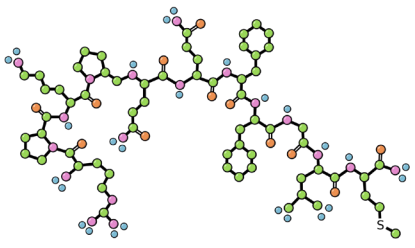


Neuropeptides are housed in large dense core vesicles. They are co-released along with other neurotransmitters during neuronal signaling.

Neurokinin Receptor

ID	Name	Receptor	Description	Purity
E4416	Eledoisin	NK2/3	Substance P analog; NK agonist.	≥95%
E4417	Eledoisin Related Peptide	NK2/3	Substance P analog; NK agonist.	≥95%
K0172	Kassinin	NK2	Tachykinin neuropeptide found in amphibians; NK2 agonist.	≥95%
M1752	Men 10376	NK2	NK2 antagonist.	≥95%
N1977	Neurokinin A (4-10)	NK1/2	NK1/2 agonist.	≥95%
N1978	Neurokinin B	NK3	NK3 agonist.	≥95%
N1985	Neuropeptide K, pig	NK2	Endogenous peptide, N-terminal-extended neurokinin A analog; NK2 agonist.	≥95%
N1988	γ-Neuropeptide, rabbit	NK1/2	Endogenous neuropeptide; NK2 agonist.	≥95%
P2993	Phyllomedusin	NK1	Amphibian tachykinin neuropeptide; NK1 activator.	≥95%
S8005	Substance P	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8006	Substance P (1-4)	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8008	Substance P (1-9)	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8009	Substance P (7-11)	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8010	[Nle11]-Substance P	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8011	[Pro9]-Substance P	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8012	[Sar9]-Substance P	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
S8013	[Tyr8]-Substance P	NK1	Endogenous tachykinin peptide, involved in inflammation, stress signaling, nociception; NK1 agonist.	≥95%
U6118	Uperolein	NK1	Peptide found in amphibian skin; NK-1 agonist.	≥95%

Tachykinin peptides represent one of the largest families of neuropeptides. The three primary receptor subtypes for tachykinin peptides are neurokinin 1 (NK1), 2 (NK2), and 3 (NK3). Biological effects of tachykinin activity include contraction of smooth muscle, the mediation of excitatory neurotransmission in the central nervous system, the regulation of immune and inflammatory responses, and the stimulation of endocrine and exocrine gland secretion. Synthetic modification of tachykinins have improved small-molecule selectivity and potency for particular receptors.



Substance P

μ-Opioid Receptor

The μ-opioid receptors (μORs) are a class of opioid receptors that are primarily located in the brain and some areas of the spinal cord. They are activated by a family of endogenous neuropeptides, and also alkaloid opiates, the most notable of which is morphine. The therapeutic study of these receptors have lead to a better understanding of drug addiction, pain, stress, and reward behaviors. Neuropeptides like the enkephalins and beta-endorphin exhibit the highest affinity for this receptor type.

ID	Name	Receptor	Description	Purity
A0249	BAM-22P	μOR	Cleavage product of proenkephalin; κOR/μOR agonist.	≥95%
A1371	Adrenorphin	μOR	Cleavage product of proenkephalin; κOR/μOR agonist.	≥95%
C7602	CTAP	μOR	μOR agonist.	≥95%
D0025	DAMGO	μOR	μOR agonist.	≥95%
D1769	Dermorphin	μOR	Opioid peptide; μOR agonist.	≥95%
D1770	Dermorphin Analog	μOR	Dermorphin analog; δOR and μOR agonist.	≥95%
E2542	Met-Enkephalin Amide	μOR	Endogenous opioid peptide; δOR and μOR agonist.	≥95%
E5210	Endomorphin-1	μOR	Endogenous opioid peptide; μOr agonist.	≥95%
E5211	Endomorphin-2	μOR	Endogenous opioid peptide; μOr agonist.	≥95%
E5214	α-Endorphin	μOR	Endogenous opioid peptide; μOR agonist.	≥95%
E5217	β-Endorphin, human	μOR	Endogenous opioid peptide; μOR agonist.	≥95%
E5240	Leu-Enkephalin	μOR	Endogenous opioid peptide; δOR and μOR agonist.	≥95%
E5241	Met-Enkephalin	μOR	Endogenous opioid peptide; δOR and μOR agonist.	≥95%
M3219	Tyr-MIF-1	μOR	μOR antagonist.	≥95%

Neuropeptide Y Receptor

ID	Name	Receptor	Description	Purity
N1983	Neuropeptide Y (3-36), human	NPYR	Involved in feeding behavior, stress signaling, circadian rhythm; Y1-5 agonist.	≥95%
N1987	Neuropeptide Y (13-36), human	NPYR	Involved in feeding behavior, stress signaling, circadian rhythm; Y1-5 agonist.	≥95%
P0350	Pancreatic Polypeptide, chicken	NPYR	Regulates pancreatic cell signaling; Y4 agonist.	≥95%
P0351	Pancreatic Polypeptide, rat	NPYR	Regulates pancreatic cell signaling; Y4 agonist.	≥95%
P0353	Pancreatic Polypeptide, human	NPYR	Regulates pancreatic cell signaling; Y4 agonist.	≥95%
P1763	Peptide YY, human	NPYR	Involved in enteric movement and feeding behavior; Y1/2 agonist.	≥95%
P1768	Peptide YY (3-36), human	NPYR	Involved in enteric movement and feeding behavior; Y1/2 agonist.	≥95%

Neuropeptide Y (NPY) receptors are activated by the peptides neuropeptide Y, peptide YY, and pancreatic polypeptide. This family of receptors consists of five known Y receptors in mammals, designated Y1 through Y5. The NPY receptors exhibit control over a variety of behavioral processes including anxiety, appetite, and emotional regulation. It has been implicated in many human diseases, such as obesity, alcoholism, and depression.

Vasopressin Receptor

Vasopressin is a neuropeptide synthesized in the hypothalamus. It and its analogs act on the vasopressin family of receptors, consisting of subtypes V1, V2, and V3. Two of the more well studied effects of vasopressin are the increase of arterial blood pressure through the constriction of arterioles, and the regulation of extracellular fluid volume by controlling water reabsorption (vasopressin is also known as ADH; antidiuretic hormone). It may also have an effect on the regulation of social behavior and stress response.

ID	Name	Receptor	Description	Purity
A6827	Argipressin Acetate	V1/2	Involved in vascular contractility and water/Na+ homeostasis; V1/2 agonist.	≥95%
A7657	Atosiban Acetate	V1/2, OXTR	V1/2 and OXTR antagonist.	≥95%
D1776	Desmorpressin	V2	Synthetic vasopressin derivative; V2 agonist.	≥95%
D1777	Desmorpressin Acetate	V2	Vasopressin derivative; V2 agonist.	≥95%
L9880	Lysipressin Acetate	V1/2	Involved in vascular contraction; V1/2 agonist.	≥95%
V0274	[Lys8]-Vasopressin	V1/2	Vasopressin analog; V1/2 agonist.	≥95%
V0275	[Arg8]-Vasotocin	V, OXTR	Oxytocin-vasopressin analog.	≥95%

Additional Neuropeptides

ID	Name	Receptor	Description	Purity
B5648	Bombesin	BBR	GRP analog, found in *Bombina*; bombesin and GRP agonist, hERG K+ channel blocker.	≥95%
B5649	[Tyr4]-Bombesin	BBR	GRP analog, found in *Bombina*; bombesin and GRP agonist, hERG K+ channel blocker.	≥95%
L3577	Litorin	BBR	Bombesin-like peptide found in amphibians.	≥95%
N1980	Neuromedin B, pig	BBR	Involved in endocrine signaling and feeding behavior; BB1 agonist.	≥95%
N1981	Neuromedin C (18-27), pig	BBR	Involved in endocrine signaling and feeding behavior; BB2 agonist.	≥95%
P2992	Phylloitorin	BBR	GRP (BB1) and neuromedin B (BB2) agonist.	≥95%
G0178	Gastrin, chicken	CCK2	CCK2 agonist, indirect H+/K+ ATPase activator.	≥95%
G0179	Gastrin-1, rat	CCK2	CCK2 agonist, indirect H+/K+ ATPase activator.	≥95%
G0180	Gastrin I, human	CCK2	Involved in feeding behavior and enteric movement; CCK2 agonist, indirect H+/K+ ATPase activator.	≥95%
G0181	Gastrin Releasing Peptide, human	CCK2	Involved in feeding behavior, stress signaling, circadian rhythms; GRP agonist.	≥95%
G0182	Gastrin Releasing Peptide, pig	CCK2	Involved in feeding behavior, stress signaling, circadian rhythms; GRP agonist.	≥95%
S3351	Sincalide	CCK2	Peptide fragment of CCK; CCK agonist.	≥95%
A0961	Adrenocorticotropic Hormone (1-39), rat	MC2	Involved in stress signaling; MC2 agonist.	≥95%
A0963	Adrenocorticotropic Hormone (1-10), human	MC2	Involved in stress signaling; MC2 agonist.	≥95%
A0964	Adrenocorticotropic Hormone (1-13), human	MC2	Involved in stress signaling; MC2 agonist.	≥95%
A0966	Adrenocorticotropic Hormone (1-16), human	MC2	Involved in stress signaling; MC2 agonist.	≥95%
A0967	Adrenocorticotropic Hormone (1-17), human	MC2	Involved in stress signaling; MC2 agonist.	≥95%
A0968	Adrenocorticotropic Hormone (1-24), human	MC2	Involved in stress signaling; MC2 agonist.	≥95%
S5747	[Tyr11]-Somatostatin	SSTR	Somatostatin agonist, GABA modulator.	≥95%
S5749	Somatostatin-14	SSTR	Somatostatin agonist, GABA modulator.	≥95%
S5750	Somatostatin-28	SSTR	Somatostatin agonist, GABA modulator.	≥95%
S5751	Somatostatin-25	SSTR	Somatostatin agonist, GABA modulator.	≥95%
S5752	Somatostatin-28 (1-12)	SSTR	Somatostatin agonist, GABA modulator.	≥95%
S5753	Somatostatin-28 (1-14)	SSTR	Somatostatin agonist, GABA modulator.	≥95%
V0160	Vapreotide	SSTR	Synthetic somatostatin analog; somatostatin 2 agonist.	≥95%

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