

Product Data Sheet

Cat#	SP-53601-5
Description:	Laminin Penta Peptide, amide (AA: Tyr-Ile-Gly-Ser-Arg-NH ₂) (MW: 593.7)
Size:	5 mg
Purity:	>95%
Store:	Desiccated at -20oC.

Laminins are major proteins in the basal lamina (one of the layers of the basement membrane), a protein network foundation for most cells and organs. The laminins are an important and biologically active part of the basal lamina, influencing cell differentiation, migration, adhesion as well as phenotype and survival. Laminins are trimeric proteins that contain an α -chain, a β -chain, and a γ -chain, found in five, four, and three genetic variants, respectively. The laminin molecules are named according to their chain composition. Thus, laminin-511 contains $\alpha 5$, $\beta 1$, and $\gamma 1$ chains. Fourteen other chain combinations have been identified in vivo. The trimeric proteins intersect to form a cross-like structure that can bind to other cell membrane and extracellular matrix molecules. The three shorter arms are particularly good at binding to other laminin molecules, which allows them to form sheets. The long arm is capable of binding to cells, which helps anchor organized tissue cells to the membrane.

Laminin, (Mr = 800,000) is composed of three chains, A (~ 400 kda), B1 (~210 Kda), and B2 (~200 kda) which are covalently linked by disulfide bonds to form a cross-like structure. Three laminin chains have led to investigations that define functionally active regions within the laminin molecule. These biologically active sites within laminin have been defined with proteolytic fragments, antibodies, and synthetic peptides. Several synthetic peptides based on laminin sequences have been described as having biological activities similar to those of the whole laminin molecule. A nonapeptide, Cys-Asp-Pro-Gly-Tyr-Ile-Gly-Ser-Arg (CDPGYIGSR), as well as the pentapeptide Tyr-Ile-Gly-Ser-Arg (YIGSR), from the B1 chain were shown to promote cell attachment and migration. Other laminin-based peptides that have biological activity include an Arg-Gly-Asp (RGD) sequence from the short arm of the A chain and the Ile-Lys-Val-Ala-Val (1KVAV)-containing peptide from the long arm of the A chain. A 20-mer peptide (F9) from the B1 chain was reported to promote cell attachment and bind heparin. Besides promoting cell attachment and migration, YIGSR-containing peptides were reported to block angiogenesis and tumor metastases. Additionally, 1KVAV-containing peptides were observed to increase neurite outgrowth, tumor metastases, and collagenase production.

References: *Massia Sp 91993) JBC 268, 8053-8059; Timpl R (1979) JBC 254, 9933-9937; Graf, J (1987a) Cell 48,989-99; Graf, J (1987b) Biochemistry 26,6896-6900; Grant, D. S (1989) Cell 68,933-943; Tashiro, K. (1989) J. Biol. Chem. 264, 16174-16182; Tashiro, K.-I., (1991) J. Cell. Physiol. 146, 451*

All peptides are for in vitro research use only.

Related Items

Catalog#	ProdDescription
SP-100539-1 (MW: 2016.3)	Laminin A Chain (2091-2108) (AA: Cys-Ser-Arg-Ala-Arg-Lys-Gln-Ala-Ala-Ser-Ile-Lys-Val-Ala-Val-Ser-Ala-Asp-Arg)
SP-102036-5	Laminin Nonapeptide, Amide (AA: Cys-Asp-Pro-Gly-Tyr-Ile-Gly-Ser-Arg-NH ₂) (MW: 966.09)
SP-53600-5	Laminin (929-933) (AA: Tyr-Ile-Gly-Ser-Arg) (MW: 594.7)
SP-53601-5	Laminin Penta Peptide, amide (AA: Tyr-Ile-Gly-Ser-Arg-NH ₂) (MW: 593.7)
SP-53603-5	Laminin (925-933) (AA: Cys-Asp-Pro-Gly-Tyr-Ile-Gly-Ser-Arg) (MW: 967.1)
SP-53601-5	120327A