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Product Information

Tyr-Ile-Gly-Ser-Arg

Product Number **T 7154**
Storage Temperature -0 °C

Product Description

Molecular Formula: $C_{26}H_{42}N_8O_8$

Molecular Weight: 594.7

CAS Number: 110590-64-2

pI: approximately 8.5

Synonym: YIGSR, Laminin Fragment 929-933

The pentapeptide Tyr-Ile-Gly-Ser-Arg (YIGSR) occurs from amino acids 929-933 in the protein laminin. The YIGSR sequence is the major receptor binding site in laminin. YIGSR was found to diminish the formation of lung colonies in mice injected with melanoma cells and to inhibit the invasiveness of the cells *in vitro*.¹

YIGSR inhibited primary tumor growth and tumor cell deposit in the bone, liver, and kidney in a mouse model of B-cell lymphoma.² In primary porcine aortic endothelial cells, YIGSR blocked the increased expression of endothelial nitric-oxide synthase (eNOS) as induced by laminin cells, by blocking cellular binding to laminin I.³ YIGSR has been shown to displace papain and cathepsin B-like proteinase in laminin-coated wells.⁴

YIGSR has been covalently immobilized to modified glass surfaces to study cell attachment and spreading with respect to the 67 kDa high affinity laminin receptor.⁵ Conjugates of YIGSR with polyethylene glycol and distearoylphosphatidylethanolamine have been synthesized, for potential application in liposome formulations.⁶

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (1 mg/ml), yielding a clear, colorless solution.

References

1. Iwamoto, Y., et al., YIGSR, a synthetic laminin pentapeptide, inhibits experimental metastasis formation. *Science*, **238(4830)**, 1132-1134 (1987).
2. Michigami, T., et al., Growth and dissemination of a newly-established murine B-cell lymphoma cell line is inhibited by multimeric YIGSR peptide. *Clin. Exp. Metastasis.*, **16(7)**, 645-654 (1998).
3. Gloe, T., et al., The 67-kDa laminin-binding protein is involved in shear stress-dependent endothelial nitric-oxide synthase expression. *J. Biol. Chem.*, **274(23)**, 15996-16002 (1999).
4. Dalet-Fumeron, V., et al., Binding of the cysteine proteinases papain and cathepsin B-like to coated laminin: use of synthetic peptides from laminin and from the laminin binding region of the $\beta 1$ integrin subunit to characterize the binding site. *Arch. Biochem. Biophys.*, **358(2)**, 283-290 (1998).
5. Massia, S. P., et al., Covalently immobilized laminin peptide Tyr-Ile-Gly-Ser-Arg (YIGSR) supports cell spreading and co-localization of the 67-kilodalton laminin receptor with α -actinin and vinculin. *J. Biol. Chem.*, **268(11)**, 8053-8059 (1993).
6. Zalipsky, S., et al., Poly(ethylene glycol)-grafted liposomes with oligopeptide or oligosaccharide ligands appended to the termini of the polymer chains. *Bioconjug. Chem.*, **8(2)**, 111-118 (1997).

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