Product Information

SILu™Prot VEGFA, Vascular Endothelial Growth Factor A, Human

Recombinant, Expressed in HEK cells, SIL MS Protein Standard, ^{13}C- and ^{15}N-Labeled

MSST0005

Storage Temperature –20 °C
Synonyms: VEGF-A, Vascular permeability factor (VPF)

Product Description

SILu™Prot VEGFA is a recombinant, stable isotope-labeled human VEGFA which incorporates [$^{13}C_6$, $^{15}N_4$]-Arginine and [$^{13}C_6$, $^{15}N_2$]-Lysine. Expressed in human 293 cells, it is designed to be used as an internal standard for bioanalysis of VEGFA by mass spectrometry. It is a homodimer consisting of 165 amino acids (monomer) with a calculated molecular mass of 19.4 kDa. It contains no tags.

VEGFA belongs to the PDGF/VEGF growth factor family characterized by the presence of eight conserved cysteine residues and a cystine knot structure.[1] VEGF is secreted by the majority of tumor cells and initiates angiogenesis (formation of capillaries) by activating endothelial cells of existing blood vessels and promoting their migration.[2] VEGF has also been implicated in correlation with poor prognosis in breast cancer.[2] In addition, VEGF is released in rheumatoid arthritis in response to TNF-α, increasing endothelial permeability and stimulating angiogenesis.[3,4]

Each vial contains ≥10.0 µg of SILu™Prot VEGFA standard, lyophilized from a solution of phosphate buffered saline. Vial content was determined by the Bradford method using BSA as a calibrator. The correction factor from the Bradford method to amino acid analysis is 110% for this protein.

Identity

Confirmed by peptide mapping

Purity

≥95% (SDS-PAGE)

Heavy amino acid incorporation efficiency

≥98% (MS)

UniProt

P15692-4

Sequence Information

APMAEGGGQNHHEVVK**FMDVYQR**SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRIKPHQ
GQHIGEMSFLQHNKCECRPKKDRARQENPCGPCSERRK**HLFVQDPQTCK**CSCKNTDSRCKAR**QLELNER**TCRCDKPRR.

Transitions for three peptides (underlined) suggested for selected reaction monitoring analysis (SRM) are provided for download on the product display page at www.sigmaaldrich.com.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Briefly centrifuge the vial before opening. It is recommended to reconstitute the protein in sterile ultrapure water to a final concentration of 100 µg/mL.

Storage/Stability

Store the lyophilized product at −20 °C. The product is stable for at least 2 years as supplied. After reconstitution, it is recommended to store the protein in working aliquots at −20 °C.

References

1. Robinson, C.J., and Stringer, S.E., The splice variants of vascular endothelial growth factor (VEGF) and their receptors. *J Cell Sci.,* 114, 853-865 (2001.)
2. Tang, X., Tumor-associated macrophages as potential diagnostic and prognostic biomarkers in breast cancer. *Cancer Lett.,* 332, 3-10 (2013).
3. Ellis, L.M., Epidermal growth factor receptor in tumor angiogenesis. Hematol. Oncol. Clin. North Am., 18, 1007-1021 (2004).
4. Afuwape, A.O. et. al., The role of the angiogenic molecule VEGF in the pathogenesis of rheumatoid arthritis.

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23222510 Rev 05/25