

SibTech, Inc.

scVEGF-PEG-DOTA

Product #SBT335

scVEGF-PEG-DOTA is single chain vascular endothelial growth factor, scVEGF (SibTech product #SBT300), site-specifically derivatized with radionuclide chelator DOTA via PEGylated linker.

Synthesis: scVEGF-PEG-DOTA is synthesized by site-specific conjugation of chelator p-NH₂-Bn-DOTA (S-2-(4-Aminobenzyl)-1,7,10-tetraazacyclododecane tetraacetic acid, Macrocyclics, Dallas, TX) to C4 residue of Cys-tag *via* 3.4-kDa Mal-PEG-NHS (Creative PEGworks, Winston Salem, NC). scVEGF-PEG-DOTA is purified by RP-HPLC to >95% and lyophilized from 20 mM ammonium bicarbonate.

Functional activity: The ability of scVEGF-PEG-DOTA to bind to VEGF receptor VEGFR-2 is tested *in vitro* using a competition assay on 293/KDR human transformed embryonic kidney cells expressing 2.5x10⁶ VEGFR-2/cell (SibTech product #SBT021.293). Relative to unmodified scVEGF, scVEGF-PEG-DOTA displays 95-100% VEGF activity.

Intended field of use: scVEGF-PEG-DOTA can be radiolabeled with imaging and therapeutic radionuclides, such as ^{99m}Tc, ⁶⁴Cu, ⁶⁸Ga, and ¹⁷⁷Lu (1, 2). Depending on radionuclide, radiolabeled scVEGF-PEG-DOTA can be used as PET or SPECT imaging tracer, as well as radiotherapeutic agent targeting VEGF receptors in angiogenic vasculature.

One vial contains 0.2 mg of essentially salt-free lyophilized scVEGF-PEG-DOTA

Reconstitution: To insure full recovery, spin down the vial briefly before opening. Reconstitute in 0.2 ml of a buffer of your choice, to a final concentration of 1 mg/ml. We do not recommend using less than 0.2 ml for reconstitution.

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Stability: Lyophilized scVEGF-PEG-DOTA is stable for 1 year at -20°C. After reconstitution, scVEGF-PEG-DOTA is stable and functionally active for at least 6 months, if stored at -20°C or below. Multiple thawing-freezing should be avoided.

Safety warnings: For research use only. Not for human use. Not recommended or intended for diagnosis in humans or animals. As all chemicals should be considered as potentially hazardous, it is advisable to wear suitable protective clothing, such as laboratory overalls, safety glasses and gloves. Care should be taken to avoid contact with skin or eyes. In case of contact with skin or eyes, wash immediately with water.

References

1. Backer MV, Levashova Z, Patel V, Jehning BT, Claffey K, Blankenberg FG, Backer JM. Molecular imaging of VEGF receptors in angiogenic vasculature with single-chain VEGF driven probes. *Nature Med*, 13, 504-509, 2007
2. Backer MV, Levashova Z, Levenson R, Blankenberg FG, Backer JM. Cysteine-containing fusion tag for site-specific conjugation of therapeutic and imaging agents to targeting proteins. *Methods in Molecular Medicine. Peptide-based Drug Design*. Humana Press, New York, NY. Ed: L. Otvos. Vol. 494, p.275-94, 2008.