

PRODUCT SPECIFICATION

Recombinant anti-human CEA nanobody 5.

Catalogue number: sdAb-CEA-Nb5.



Background:

Carcino-embryonic antigen (CEA) is a glycoprotein involved in cell adhesion. The protein was discovered in 1965 in cancer cells of the colon. Patients with colorectal cancer, or cancer of the stomach, pancreas, ovary, lung or breast, have increased CEA levels. CEA is considered as a tumor marker. It is anchored to the membrane via a GPI (glycosyl phosphatidyl inositol) anchor.

Applications: Suitable for immunoprecipitation, flow cytometry, ELISA, imaging through labeling with radionuclides or with fluorescent tags. This product is for R&D use only, not for drug, diagnostic, therapeutic, household, or other uses.

Source and properties: Raised in dromedary with purified CEA protein. The library was panned with human CEA. The equilibrium dissociation constant was determined at **0.34 nM K_D** , as measured with a Biacore instrument, and the nanobody has a melting temperature of 70°C.

Availability: CEA Nb5 comes with a COOH-terminal HA epitope tag. Available in 100 µg, 500 µg, 1000 µg quantities. For bulk amounts, please inquire.

Expression host: VHH single domain antibody purified from *E. coli*.

Storage buffer: 20 mM Tris-HCl pH 8.0, 150 mM NaCl, 1mM DTT, 60 % glycerol. Store at -20°C. The sample will not freeze. Maintain sample in cold environment during transport to increase longevity.

Stability: Store at -20°C upon arrival. For long term storage, aliquot and store at -80°C. Avoid repeated freeze/thaw cycles.

Sources:

* Vaneycken, et al. J Nucl Med 2010; 51:1099–1106 DOI: 10.2967/jnumed.109.069823

* Cortez-Retamozo et al. CANCER RESEARCH 64, 2853–2857, 2004.

*Wikipedia: https://en.wikipedia.org/wiki/Carcinoembryonic_antigen

Citations:

* Cortez-Retamozo et al., Efficient Cancer Therapy with a Nanobody-Based Conjugate. CANCER RESEARCH 64, 2853–2857, 2004.

*Vaneycken, et al. In Vitro Analysis and In Vivo Tumor Targeting of a Humanized, Grafted Nanobody in Mice Using Pinhole SPECT/Micro-CT. J Nucl Med 2010; 51:1099–1106 DOI: 10.2967/jnumed.109.069823.

*Thinzar et al., Fluorescent Anti-CEA Nanobody for Rapid Tumor-Targeting and Imaging in Mouse Models of Pancreatic Cancer. Biomolecules 2022, 12, 711. <https://doi.org/10.3390/biom12050711>