Recombinant Human TEM8/ANTXR1 His-tag

Catalog Number: 3886-AR

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human TEM8/ANTXR1 protein Glu33-Ser321, with a C-terminal 6-His tag Accession # Q9H6X2
N-terminal Sequence Analysis	No results obtained. Gln28 inferred from enzymatic pyroglutamate treatment revealing Gly29
Structure / Form	Monomer
Predicted Molecular Mass	34 kDa

SPECIFICATIONS

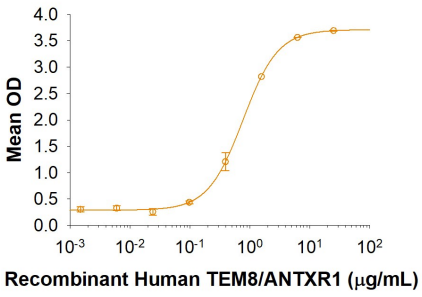
SDS-PAGE	38-46 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Anthrax Protective Antigen is coated at 1.5 µg/mL (100 µL/well), the concentration of Recombinant Human TEM8/ANTXR1 that produces 50% optimal binding response is 0.6-3.6 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

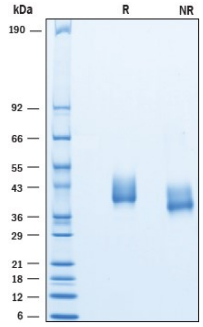
DATA

Binding Activity



When anthrax protective antigen (PA) is coated at 1.5 µg/mL, 100 µL/well, Recombinant Human TEM8/ANTXR1 (Catalog # 3886-AR) binds with an ED_{50} of 0.6-3.6 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human TEM8/ANTXR1 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 38 - 46 kDa and 36 - 43 kDa, respectively.

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BACKGROUND

Anthrax toxin receptor 1 (ANTXR1), also known as Tumor endothelial marker 8 (TEM8), is a glycoprotein of the Anthrax Toxin Receptor family that is expressed by endothelial cells. Anthrax toxin receptor 1 contains a 289 amino acid (aa) extracellular domain, a 21 aa transmembrane domain, and a 222 aa cytoplasmic domain. Type I transmembrane isoforms of 564 aa (80-85 kDa) and 368 aa (60 kDa) and potentially secreted isoforms of 330 aa and 297 aa (45 kDa) are differentially expressed. All diverge at the C-terminal end but share the N-terminal extracellular domain (1). The extracellular domain shares structural similarity with von Willebrand factor type (vWFA) domains, which are characterized by their interactions with ECM components (2, 3). The extracellular domain is involved in reorganization of cell actin cytoskeleton (2, 3). Anthrax Receptor 1 binds Anthrax Protective Antigen with lesser affinity that Anthrax Receptor 2 and induces toxin internalization (4). Anthrax toxin receptor 1 has been implicated in tumor angiogenesis, as its expression has been shown to up-regulate in tumor blood vessels and is characterized as a tumor endothelial marker (5). ANTXR-1 was reported to be an amplifier of Wnt signaling in tumor microenvironment (6). Additionally, Anthrax toxin receptor 1 serves as the receptor for Seneca Valley virus, an oncolytic picornavirus affecting neuroendocrine cancers (7). Human ANTXR1 shares 99% aa identity with mouse and rat and 92% identity with dog and chick ANTXR1 within the extracellular domain.

References:

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2. Hotchkiss, K. *et al.* (2004). Experimental Cell Research. **305**:133.
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4. Sheng, Fu. *et al.* (2010) PLOS One. **5(6)**: e11203.
5. Carson-Walter, EB. *et al.* (2001). Cancer Res. **18**:6649.
6. Verma, K. *et al.* (2011) PLOS One. **6(8)**:e22334.
7. Miles, L. *et al.* (2017). J Clin Invest. **8**:2957.

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