

DESCRIPTION

| | |
|-------------------------------------|---|
| Source | Mouse myeloma cell line, NS0-derived mouse OCAM/NCAM2 protein Met1-Asn697, with a C-terminal 6-His tag Accession # O35136 |
| N-terminal Sequence Analysis | Leu20 |
| Predicted Molecular Mass | 76.8 kDa |

SPECIFICATIONS

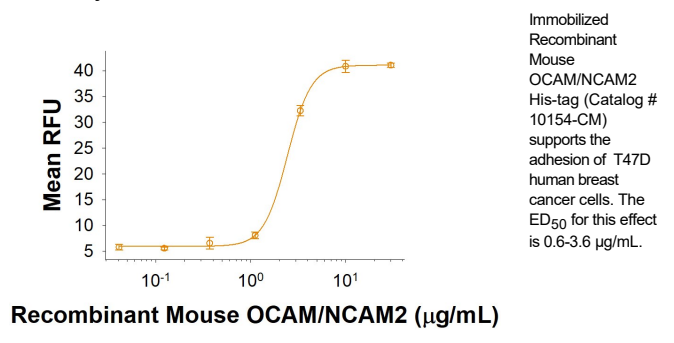
| | |
|------------------------|---|
| SDS-PAGE | 95-110 kDa, under reducing conditions |
| Activity | Measured by the ability of the immobilized protein to support the adhesion of T47D human breast cancer cells. The ED ₅₀ for this effect is 0.6-3.6 µg/mL. |
| Endotoxin Level | <0.10 EU per 1 µg of the 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

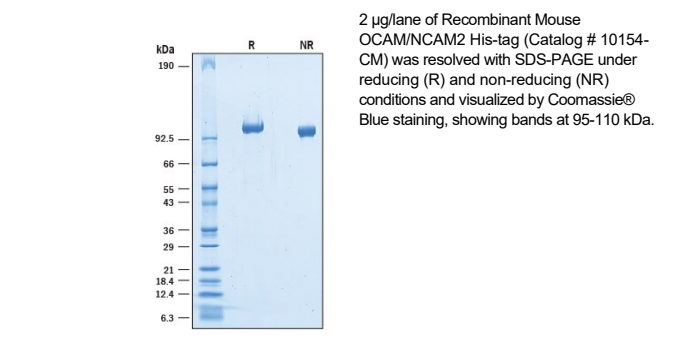
| | |
|--------------------------------|---|
| Reconstitution | Reconstitute at 500 µg/mL in PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | <p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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 to -70 °C under sterile conditions after reconstitution. |

DATA

Bioactivity



SDS-PAGE



BACKGROUND

OCAM (olfactory cell adhesion molecule), also known as NCAM2 (neural cell adhesion molecule 2) and RNCAM (Rb-8 neural cell adhesion molecule) is an approximately 100 kDa type I transmembrane glycoprotein belonging to the NCAM family within the immunoglobulin superfamily (1-5). OCAM dimerizes and participates in homophilic adhesion, but unlike NCAM1/CD56, it is not polysialic acid-glycosylated, and does not participate in heparin sulfate binding or heterophilic adhesion (2). The 837 amino acid (aa) form of human or mouse OCAM contains a 19 aa signal sequence, a 678 aa extracellular domain (ECD) with five Ig-like C2-type domains and two fibronectin type III domains, a transmembrane domain and a 119 aa cytoplasmic domain (2-4). The first two Ig-like domains mediate homodimer formation in trans (6). In mouse, a glycosyl phosphatidylinositol-linked form may show differential expression and function on olfactory axons (1-3, 7). The ECD of mouse OCAM shares 93%, 98% and 92% aa sequence identity with human, rat, and bovine OCAM, respectively. OCAM is expressed by a subset of axons in the olfactory, vomeronasal, and retrosplenial cortex in a zone-specific manner (1-3, 7-9). It is thought to be important for organization of axons and dendrites and segregation of axodendritic and dendrodendritic synapses within glomeruli (1, 7, 10, 11). Because OCAM is encoded on chromosome 21 in humans, it is implicated in neurological abnormalities in Down Syndrome (trisomy 21) (1, 3, 4). It may also be implicated in development of autism and Alzheimer's disease, and over-expressed in some breast and prostate cancers (1, 5).

References:

1. Winther, M. *et al.* (2012) *Int. J. Biochem. Cell Biol.* **44**:441.
2. Yoshihara, Y. *et al.* (1997) *J. Neurosci.* **17**:5930.
3. Alenius, M. and S. Bohm (1997) *J. Biol. Chem.* **272**:26083.
4. Paoloni-Giacobino, A. *et al.* (1997) *Genomics* **43**:43.
5. Takahashi, S. *et al.* (2011) *Cancer Sci.* **102**:808.
6. Kulahin, N. *et al.* (2011) *Structure* **19**:203.
7. Alenius, M. and S. Bohm (2003) *Development* **130**:917.
8. von Campenhausen, H. *et al.* (1997) *Neuroreport* **8**:2607.
9. Ichinohe, N. *et al.* (2003) *Eur. J. Neurosci.* **18**:1764.
10. Walz, A. *et al.* (2006) *Mol. Cell. Neurosci.* **32**:1.
11. Borisovska, M. *et al.* (2011) *J. Physiol.* **589**:1927.