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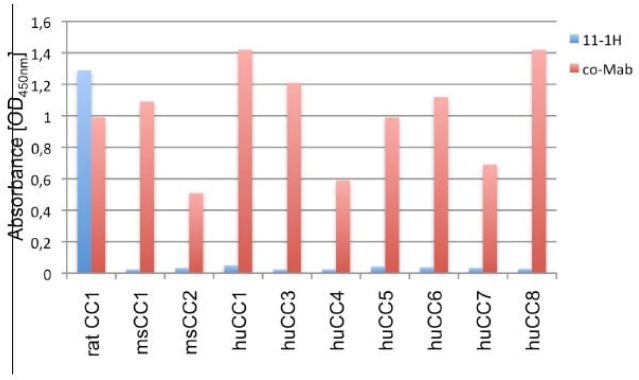
anti rat CEACAM1 delta N
monoclonal antibody
mouse IgG1; clone **11-1H**

DESCRIPTION

Clone name	**11-1H**
Applications	Flow Cytometry, ELISA, IHC, IP, WB
Clonality & host & isotype	Monoclonal mouse IgG1/kappa
Immunogen	Recombinant soluble rat CEACAM1-Fc produced in HEK293 cells
Molecular weight of target	57 kDa as a monomer
Recommended concentration	2-10 µg/ml
Concentration	mg/ml (lot specific)
Formulation	PBS (pH 7.3), cell culture grade
Purification	purified from cell culture supernatant (ISF-1 Media) by affinity chromatography (protein G)
Storage	Shipped at -20°C or with ice packs, upon delivery store at -20°C. Dilute in PBS (pH7.3) if necessary. Stable for 12 months from date of receipt. Avoid repeated freeze-thaws.
Conjugation	unconjugated
Mouse strain	Balb/c
Fusion partner	P3/NS1/1-Ag4.1
Target	Rat CEACAM1 is a transmembrane cell adhesion molecule expressed in leukocytes, epithelial and blood vessel endothelial tissue. The extracellular domain consists of four highly glycosylated immunoglobulin domains (Ig-like-V-type (aa 42-140), Ig-like-C2-type1 (aa 147-232), Ig-like-C2-type2 (237-317), Ig-like-C2-type3 (325-403)), followed by a transmembrane region and a long /short cytoplasmatic domain (1). In rats, CEACAM1 is the only surface-associated member of the CEA family and unlike to humans, the rat lacks any GPI-anchored versions (2). The antibody binds to one of the C2-type domains, it does not bind to the N-domain.
UniProt ID	P16573

IMAGE DATA



Indirect Enzym-Linked Immunosorbent Assay (ELISA)
Indicated recombinant CEACAM proteins were coated in wells of an ELISA plate and incubated with the mAb **11-1H** or with a corresponding CEACAM specific mAb. Detection occurred with an HRP-conjugated detection Abs. The mAb 11-1H specifically binds to the rat CEACAM1 only. It does not cross-react with human CEACAM-1, -3. -4, -5, -6, 7 and -8, mouse CEACAM1 and mouse CEACAM2.

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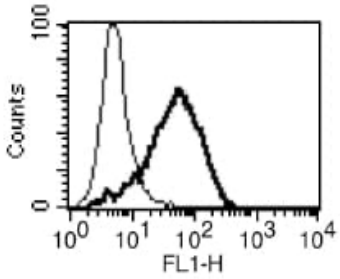
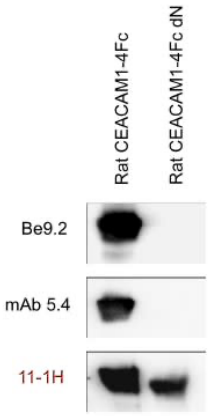


Flow Cytometry Analysis

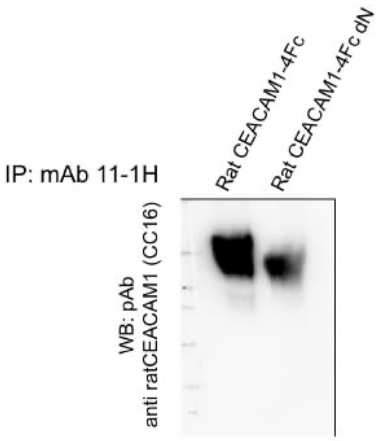
CHO-cells were transfected with a rat CEACAM1-4S expressing plasmid and expression was detected with the mAb **11-1H** followed by a FITC-labelled secondary anti mouse IgG (bold line). A mouse control mAb was used as negative control (thin line).



Western-blot analysis

Recombinant rat CEACAM1-4-huFc and rat CEACAM1-4-huFc dN, lacking the very N-terminal V-type domain, were separated by SDS-PAGE and blotted on a nitrocellulose membrane. After blocking, the membranes were exposed with the indicated mAb, followed by HRP-conjugated secondary Abs. Visualization occurred by chemiluminescence.

The mAb **11-1H** also binds to the CEACAM1 lacking the N-terminal domain, indicating that the mAb is directed against one of the constant C2-type domains.



Immunoprecipitation

Lysates of CHO-cells expressing the rat CEACAM-huFc and rat CEACAM1-huFc (deltaN), lacking the N-terminal V-like domain, respectively were spiked with the mAb **11-1H** and immunoprecipitated with protein A Sepharose. The pelleted proteins were exposed to an SDS-PAGE immunoblot and precipitated proteins were immunodetected by a pAb specific for rat CEACAM1 followed by an HRP-conjugated secondary Abs.

The mAb **11-1H** precipitates both of the proteins, indicating the epitope to be located on one of the constant C2-type domain.

REFERENCE

(1) Lin SH, Guidotti G. **Cloning and expression of a cDNA coding for a rat liver plasma membrane ecto-ATPase. The primary structure of the ecto-ATPase is similar to that of the human biliary glycoprotein I**. J Biol Chem. 1989 Aug 25;264(24):14408-14. PMID: 2527235

(2) Singer BB, Scheffrahn I, Heymann R, Sigmundsson K, Kammerer R, Obrink B. **Carcinoembryonic antigen-related cell adhesion molecule 1 expression and signaling in human, mouse, and rat leukocytes: evidence for replacement of the short cytoplasmic domain isoform by glycosylphosphatidylinositol-linked proteins in human leukocytes**. J Immunol. 2002 May 15;168(10):5139-46. PMID: 11994468

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