

**DESCRIPTION**

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat CD44 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human, mouse, or porcine CD44 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 740017
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant rat CD44 Gln22-Thr223 (predicted) Accession # P26051
<b>Conjugate</b>	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

**APPLICATIONS**

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	Rat CD4 <sup>+</sup> splenocytes

**PREPARATION AND STORAGE**

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> ● 12 months from date of receipt, 2 to 8 °C as supplied.

**BACKGROUND**

CD44 is a ubiquitously expressed protein that is the major receptor for hyaluronan and exerts control over cell growth and migration (1-5). Mouse CD44 has a 22 amino acid (aa) signal sequence, an extracellular domain (ECD) with a 100 aa hyaluronan-binding disulfide-stabilized link region and a 48-463 aa stem region, a 21 aa transmembrane domain, and a 72 aa cytoplasmic domain. Within the stem, ten variably spliced exons (v1-10, exons 6-15) produce multiple protein isoforms (1-5). The standard or hematopoietic form, CD44H, does not include the variable segments (1-5). Cancer aggressiveness and T cell activation have been correlated with expression of specific isoforms (2, 4). With variable N- and O-glycosylation and splicing within the stalk, CD44 can range from 80 to 200 kDa (1, 2). Within the N-terminal invariant portion of the ECD (aa 23-222), mouse CD44 shares 92%, 77%, 77%, 79% and 71% identity with corresponding rat, human, equine, canine and bovine CD44, respectively. The many reported functions of CD44 fall within three categories (1, 2). First, CD44 binds hyaluronan and other ligands within the extracellular matrix and can function as a "platform" for growth factors and metalloproteinases. Second, CD44 is a co-receptor that modifies activity of receptors including MET and the ErbB family of tyrosine kinases. Third, the CD44 intracellular domain links the plasma membrane to the actin cytoskeleton via the ERM proteins, ezrin, radixin and moesin. CD44 can be synthesized in a soluble form (4) or may be cleaved at multiple sites by either membrane-type matrix metalloproteinases, or ADAM proteases to produce soluble ectodomains (6, 7). The cellular portion may then undergo gamma secretase-dependent intramembrane cleavage to form an Aβ-like transmembrane portion and a cytoplasmic signaling portion that affects gene expression (8, 9). These cleavage events are thought to promote metastasis by enhancing tumor cell motility and growth (1, 2, 6).

**References:**

1. Pure, E. and R.K. Assoian (2009) *Cell. Signal.* **21**:651.
2. Ponta, H. *et al.* (2003) *Nat. Rev. Mol. Cell Biol.* **4**:33.
3. Screaton, G.R. *et al.* (1992) *Proc. Natl. Acad. Sci. USA* **89**:12160.
4. Lynch, K.W. (2004) *Nat. Rev. Immunol.* **4**:931.
5. Yu, Q. and B.P. Toole (1996) *J. Biol. Chem.* **271**:20603.
6. Nagano, O. and H. Saya (2004) *Cancer Sci.* **95**:930.
7. Nakamura, H. *et al.* (2004) *Cancer Res.* **64**:876.
8. Murakami, D. *et al.* (2003) *Oncogene* **22**:1511.
9. Lammich, S. *et al.* (2002) *J. Biol. Chem.* **277**:44754.

**PRODUCT SPECIFIC NOTICES**

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.