

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD44s on a panel of CD44 transfected COS cells by flow cytometry (Fox, S.B. <i>et al.</i> (1994) <i>Cancer Res.</i> 54 :4539). This antibody recognizes an epitope in the invariant N-terminal region of all CD44 protein isoforms.
Source	Monoclonal Mouse IgG _{2A} Clone # 2C5
Purification	Protein A or G purified from ascites
Immunogen	Recombinant human CD44v3-10 (includes the invariant N-terminal exons and CD44v3-10 exons)
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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.

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human CD44 Fc Chimera (Catalog # 3660-CD)
Flow Cytometry	2.5 µg/10 ⁶ cells	Human whole blood monocytes
Immunohistochemistry	8-25 µg/mL	Immersion fixed paraffin-embedded sections of human tonsil
Immunoprecipitation	Fox, S.B. <i>et al.</i> (1994) <i>Cancer Res.</i> 54 :4539.	

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CD44 is a ubiquitously expressed protein that is the major receptor for hyaluronan and exerts control over cell growth and migration (1-3). Human CD44 has a 20 amino acid (aa) signal sequence, an extracellular domain (ECD) with a 100 aa hyaluronan-binding disulfide-stabilized link region and a 325-530 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 (1-3). The standard or hematopoietic form, CD44s, does not include the variable segments (1-3). Cancer aggressiveness and T cell activation have been correlated with expression of specific isoforms (1, 3). With variable N- and O-glycosylation and splicing within the stalk, CD44 can range from 80-200 kDa (1). Within the N-terminal invariant portion of the ECD (aa 21-220), human CD44 shares 76%, 76%, 86%, 83%, and 79% identity with corresponding mouse, rat, equine, canine, and bovine CD44, respectively. The many reported functions of CD44 fall within three categories (1). First, CD44 binds hyaluronan and other ligands within the extracellular matrix and can function as a "platform" for growth factors and metalloproteinases. Second, CD44 can function as 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 (5, 6). 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 (7, 8). These cleavage events are thought to promote metastasis by enhancing tumor cell motility and growth (1, 5).

References:

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6. Nakamura, H. *et al.* (2004) *Cancer Res.* **64**:876.
7. Murakami, D. *et al.* (2003) *Oncogene* **22**:1511.
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