

DESCRIPTION

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| Species Reactivity | Mouse |
| Specificity | Detects mouse CD74 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human CD74 is observed. |
| Source | Monoclonal Rat IgG ₁ Clone # 829706 |
| Purification | Protein A or G purified from hybridoma culture supernatant |
| Immunogen | Chinese hamster ovary cell line CHO-derived recombinant mouse CD74 Gln56-Cys215 Accession # P04441 |
| Conjugate | Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm |
| Formulation | 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.

| | Recommended Concentration | Sample |
|-----------------------|---------------------------------|-------------------------------------|
| Flow Cytometry | 0.25-1 µg/10 ⁶ cells | A20 mouse B cell lymphoma cell line |

PREPARATION AND STORAGE

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| Shipping | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied. |

BACKGROUND

CD74, also known as Invariant chain (Ii) and p33, is a type 2 transmembrane glycoprotein that plays an important role in adaptive immunity, inflammation, and cancer (1). Mature mouse CD74 consists of a 29 amino acid (aa) cytoplasmic domain, a 29 aa transmembrane segment, and a 224 aa extracellular domain (ECD) that contains one thyroglobulin type 1 domain (2). Alternative splicing generates a short isoform that lacks the thyroglobulin domain (2). Within the ECD, mouse CD74 shares 75% and 88% aa sequence identity with human and rat CD74, respectively. CD74 functions as a chaperone for MHC class II molecules on antigen presenting cells and undergoes progressive proteolysis during class II trafficking and antigenic peptide loading (3). Full length CD74 assembles into trimers which then associate with class II molecules in nonameric complexes on the cell surface (4, 5). CD74 also associates with CD44 and binds with high affinity to the cytokine MIF, leading to inflammatory leukocyte responses, protection from tissue fibrosis, B cell proliferative and survival signaling, and the up-regulation of angiogenic factors in endometrial stromal cells (6-11). MIF binding notably induces the proteolytic cleavage of the CD74 intracellular domain which then promotes B cell differentiation (10). CD74 is upregulated on non-immune cells at sites of inflammation including amyloid beta plaques and atherosclerotic plaques (12, 13). It is also upregulated in a variety of cancers and enhances tumorigenicity, tumor angiogenesis, and metastasis (1, 14).

References:

1. Beswick, E.J. and V.E. Reyes (2009) *World J. Gastroenterol.* **15**:2855.
2. Koch, N. *et al.* (1987) *EMBO J.* **6**:1677.
3. Riberdy, J.M. *et al.* (1992) *Nature* **360**:474.
4. Koch, N. *et al.* (1991) *J. Immunol.* **147**:2643.
5. Roche, P.A. *et al.* (1991) *Nature* **354**:392.
6. Leng, L. *et al.* (2003) *J. Exp. Med.* **197**:1467.
7. Takahashi, K. *et al.* (2009) *Respir. Res.* **10**:33.
8. Heinrichs, D. *et al.* (2011) *Proc. Natl. Acad. Sci. USA* **104**:17444.
9. Shi, X. *et al.* (2006) *Immunity* **25**:595.
10. Gore, Y. *et al.* (2008) *J. Biol. Chem.* **283**:2784.
11. Veillat, V. *et al.* (2010) *J. Clin. Endocrinol. Metab.* **95**:E403.
12. Bryan, K.J. *et al.* (2008) *Mol. Neurodegen.* **3**:13.
13. Martin-Ventura, J.L. *et al.* (2009) *Cardiovasc. Res.* **83**:586.
14. Liu, Y.-H. *et al.* (2008) *J. Immunol.* **181**:6584.

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