

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CD99 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 1021527
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived human CD99 Asp23-Asp122 Accession # P14209
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *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	Human PBMC lymphocytes

PREPARATION AND STORAGE

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

CD99 (also named MIC2, E2 and thymic leukemia antigen) is the founding member of the CD99 family of molecules. The CD99 family contains four members; CD99, CD99L2, XG and the pseudogene CD99L1 (1, 2, 3). Native human CD99 is 32 kDa in size and exists as a type I transmembrane glycoprotein. This is referred to as the long, or type I isoform. It is synthesized as a 185 amino acid (aa) precursor that contains a 22 aa signal sequence, a 100 aa extracellular domain (ECD), a 25 aa transmembrane segment, and a 38 aa cytoplasmic region (4). The ECD contains no identifiable motifs, N-linked glycosylation sites, or cysteine residues; it does possess sites for O-linked glycosylation. The cytoplasmic region, albeit short, does have signal transduction capability (5). There are apparently multiple isoforms for human CD99. One shows a 16 aa deletion in the ECD (aa 34 - 49), a second shows a 38 aa deletion in the cytoplasmic region (aa 122 - 159), and a third exhibits a three aa truncation at the C-terminus (6, 7, 8). The best studied isoform shows an Asp-Gly substitution for the C-terminal 27 amino acids. This is referred to as the 28 kDa type II isoform (9). The type I and II isoforms have distinctive signal transduction pathways (FAK-src for type I; PI3K plus src-ERK1/2 for type II), and mediate clearly different biological outcomes (5, 9, 10). The two numbered isoforms may or may not coexist on the same cells. Peripheral T cells have only the long isoform, while double-positive thymocytes express both isoforms. What is unclear is the monomeric vs. dimeric status of CD99. In mouse, CD99 reportedly forms disulfide-linked homodimers (11). In human, however, CD99 is reportedly monomeric if only a type I isoform, and a covalent heterodimer if coexpressing type I and II isoforms (12, 13). Cells known to express CD99 include fibroblasts, neutrophils, T cells, double-positive thymocytes, CD34+ stem cells, monocytes and endothelial cells (2, 12, 14, 15). Homophilic interaction between CD99 on the neutrophil and CD99 on the endothelial cell regulates the transendothelial migration of neutrophils during inflammation (16). Human CD99 is only 48% aa identical to mouse CD99 (17).

References:

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Human CD99 Alexa Fluor® 750-conjugated Antibody

Monoclonal Mouse IgG₁ Clone # 1021527

Catalog Number: FAB3968S

100 µg

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