



Product Specification Sheet

Mouse Monoclonal Anti-CD81 (TAPA-1) antibodies and R-PE conjugate

Cat. # CD81-M	Mouse monoclonal anti-Human CD81 (TAPA-1) IgG, unconjugated	SIZE: 100 ug
Cat. # CD81-PE-100	Monoclonal Anti-Human CD81 (TAPA-1)-PE Conjugate	SIZE: 100 tests

TAPA-1/TAPA1, also known as CD81 antigen, is a 26-kD (236-aa) integral membrane protein expressed on many human cell types. Antibodies against TAPA1 induce homotypic aggregation of cells and can inhibit their growth. The highly hydrophobic TAPA1 protein contains 4 putative transmembrane domains and a potential N-myristoylation site. TAPA1 showed strong homology with the CD37 leukocyte antigen (151523) and with the ME491 melanoma-associated antigen (155740), both of which have been implicated in the regulation of cell growth. Andria et al. (1991) cloned the murine homolog of TAPA1 from both cDNA and genomic DNA libraries and demonstrated a very high level of homology between human and mouse genes. CD81 has a very broad cellular distribution, being expressed on cells of hematopoietic, neuroectodermal and mesenchymal origin. MAbs to CD81 have been shown to have antiproliferative effects on different lymphoid cell lines, particularly those derived from large cell lymphomas. CD81 is a component of a multimolecular complex which can include the Leu13 molecule, and, in B cells, the CD19 and CD21 molecules. MAbs to CD81 are reported to induce homotypic cell aggregation.

Chronic hepatitis C virus (HCV) infection occurs in about 3% of the world's population and is a major cause of liver disease. HCV infection is also associated with cryoglobulinemia, a B lymphocyte proliferative disorder. It has been demonstrated that the HCV envelope protein E2 binds human CD81, a tetraspanin expressed on various cell types including hepatocytes and B lymphocytes. Binding of E2 was mapped to the major extracellular loop of CD81. Ligation of CD81 with either antibody or HCV-E2 protein inhibits activation of natural killer (NK), but not T or NKT, cells; cytokine production; proliferation; cytolytic activity; and cytotoxic granule release. CD3-positive T cells, on the other hand, were stimulated by CD81 ligation. CD81 cross-linking blocks CD16-mediated tyrosine phosphorylation overall and CD3Z and ERK2 (MAPK1) phosphorylation specifically. Therefore, NK cells differ significantly from B and T cells in their response to CD81 cross-linking.

Protein name CD81 antigen (protein accession #P60033; chromosome 11p), TAPA1, TSPAN28; **Synonyms** 26 kDa cell surface protein TAPA-1, Target of the antiproliferative antibody 1, Tetraspanin-28, Tspan-28
Gene name Name: CD81,

Source of Antigen and Antibodies

Antigen	Human CD81 protein
Ab Host/type	Mouse monoclonal, IgG1,k Protein A/G pure (Cat #CD81-M) supplied in PBS, 0.005% azide, store at 4oC or in frozen form in small aliquots.
2-ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20101-1, Mouse IgG1,k (non-immune) purified, suitable for ELISA, Western, IHC as -ve control

Purified IgG (#CD81-M) was conjugated with R-PHYCOERYTHRIN (R-PE) under optimum conditions (**Cat # CD81-PE-100**). The solution is free of unconjugated antibody. It is supplied in PBS, pH 7.4, 0.1% BSA and 0.05% azide. Store conjugate at 4° C and avoid prolonged exposure to light. Do not freeze.

Storage

Short-term: unopened, undiluted vials at 4oC

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

CD81-M

This reagent is effective for **indirect immunofluorescence** staining of human tissue for **flow cytometric analysis** and fluorescence microscopy.

#CD81-PE-100

Recommended for direct immunofluorescence staining of human tissue for flow cytometric analysis using 20 ul/10⁶ cells. Since applications vary, however, each investigator should titrate the reagent to obtain optimal results. **Note:** this product is routinely tested on peripheral blood lymphocytes.

Cat # 20101-1, Mouse IgG1,k (non-immune) purified, suitable for ELISA, Western, IHC as -ve control.

Antibody concentration must be optimized for each application under defined experimental conditions.

General References: Andria ML (1991) J. Immunol. 147, 1030-1036; Boismenu r (1996) Science 271, 198-200; Crotta S (2002) J. Exp. Med. 195, 35-41; Oren R (1990) Mol. Cell. Bio. 10, 4007-4015; Pileri P (1998) Science 282, 938-941; Tseng C-T. K (202) J. Ex. med. 195, 43-49

*This product is for In vitro research use only.

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CD81-M-PE-100 71004A