

Product Information

Monoclonal Anti-FLVCR1, clone FL-58 produced in mouse, purified immunoglobulin

Catalog Number **SAB4200367**

Product Description

Monoclonal Anti-FLVCR1 (mouse IgG2a isotype) is derived from the hybridoma FL-58 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a peptide corresponding to the C-terminus of human FLVCR1 (GeneID: 28982), conjugated to KLH. The corresponding sequence is identical in monkey and bovine FLVCR1. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Monoclonal Anti-FLVCR1 recognizes human, monkey, mouse and rat FLVCR1. The antibody may be used in various immunochemical techniques including, immunoblotting (~ 72 kDa) and immunofluorescence. Staining of the FLVCR1 band in immunoblotting is specifically inhibited by the immunizing protein.

Hemoproteins are critical for the function and integrity of aerobic cells. However, free heme is toxic. Therefore, cells must balance heme synthesis with its use. FLVCR, a member of the major facilitator superfamily of transporter proteins, is the cell surface receptor for feline leukemia virus, subgroup C. Retroviral interference with FLVCR results in loss of erythroid progenitors (colony-forming units-erythroid, CFU-E) and severe anemia in cats.¹

The human FLVCR exports cytoplasmic heme and it is hypothesized that human FLVCR is required for developing erythroid cells to protect them from heme toxicity. Inhibition of FLVCR in K562 cells decreases heme export, impairs their erythroid maturation and leads to apoptosis. FLVCR is upregulated on CFU-E, indicating that heme export is important in primary cells at this stage. Studies of FLVCR expression in cell lines suggest that this exporter also impacts heme trafficking in intestine and liver. To our knowledge, this is the first description of a mammalian heme transporter.²

Interestingly, knockdown of FLVCR in mice leads to both defective erythropoiesis and disturbed systemic iron homeostasis, underscoring the critical role of heme transporters in mammalian physiology.³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze at -20°C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2.0-4.0 µg/mL is recommended using extracts of Raji cells.

Immunofluorescence: a working concentration of 2.5-5 µg/mL is recommended using A549 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Kell, S.B., et al., *Science*, **319**, 825-828 (2008).
2. Quigley, J.G., et al., *Cell*, **118**, 757-766 (2004).
3. Khan, A.A., and Quigley, J.G., *Biochim. Biophys. Acta*, **1813**, 668-682 (2011).

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