

## Anti-MSCP [LC007] Standard Size Ab02486-1.1

This reformatted mouse antibody was made using the variable domain sequences of the original Mouse IgG format, for improved compatibility with existing reagents, assays and techniques.

**Isotype and Format:** Mouse IgG1, Kappa

**Clone Number:** LC007

**Alternative Name(s) of Target:** Mitoferrin-1; SLC25A37; Mitochondrial iron transporter 1; Mitochondrial solute carrier protein; Solute carrier family 25 member 37

**UniProt Accession Number of Target Protein:** Q9NYZ2

**Published Application(s):** functional assay, FC

**Published Species Reactivity:** Monkey, Human

**Immunogen:** The original mouse antibody was raised by immunizing Balb/c mice with a synthetic peptide corresponding to aa 2177-2221 of the human MCSP sequence coupled to KLH.

**Specificity:** This antibody is specific for repeat 14 of MSCP or for an epitope that is only reconstituted when repeat 14 is present. It also binds to cynomolgus MSCP. MSCP is a mitochondrial iron transporter that specifically mediates iron uptake in developing erythroid cells, thereby playing an essential role in heme biosynthesis. The iron delivered into the mitochondria, presumably as Fe<sup>2+</sup>, is then probably delivered to ferrochelatase to catalyze Fe<sup>2+</sup> incorporation into protoporphyrin IX to make heme (By similarity).

**Application Notes:** The binding epitope of this antibody was mapped by performing flow cytometry on 4 different constructs. These were: construct 1 containing CSPG repeat 15, construct 2 containing CSPG repeat 14-15, construct 3 containing CSPG repeat 13-15, and construct 4 containing CSPG repeat 12-15 (US2014242083). Flow cytometry was used to determine whether the human version of this antibody has cross-reactivity with human and cynomolgus antigen. The cells used were HEK-EBNA expressing either a construct containing the C-terminal part of the cynomolgus MCSP protein, a signal peptide for secretion and a N-terminal FLAG-tag or the human variant of this construct (US2014242083). Further, lysis of Colo38 human malignant melanoma cells by human lymphocytes was assessed using the glycoengineered mouse version of this antibody (US2014242083). Co-culturing CD16-CAR T cells with A375 cells in presence of the human version of this antibody resulted in a dose-dependent increase in activation for the human version of this antibody (Rataj et al, 2018; pmid:30429531).

**Antibody First Published in:** Rataj et al. High-affinity CD16-polymorphism and Fc-engineered antibodies enable activity of CD16-chimeric antigen receptor-modified T cells for cancer therapy Br J Cancer. 2019 Jan;120(1):79-87.

[PMID:30429531](#)

**Note on publication:** Describes the generation and characterization of this antibody.

## Product Form

**Size:** 200 µg Purified antibody.

**Purification:** Protein A affinity purified

**Supplied In:** PBS with 0.02% Proclin 300.

**Storage Recommendation:** Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.

**Concentration:** 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.