Anti-Lipoprotein lipase [5D2] Standard Size Ab03241-10.3

This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors.

This chimeric human antibody was made using the variable domain sequences of the original Mouse IgG1 format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Human IgG1, Fc Silent™, Kappa
Clone Number: 5D2
Alternative Name(s) of Target: LPL; Phospholipase A1; EC 3.1.1.34
UniProt Accession Number of Target Protein: P06858
Published Application(s): crystallography, ICC, neutralizing, SPR, WB, ELISA, IF
Published Species Reactivity: Bovine, Cat, Chicken, Guinea Pig, Rat, Human
Immunogen: The original antibody was generated by immunizing mice with bovine LPL.
Specificity: The antibody is specific for lipoprotein lipase (LPL) and it binds to a tryptophan (Trp)-rich loop in the carboxyl terminus of LPL. The antibody does not cross react with mouse LPL. LPL is a key enzyme in triglyceride metabolism, it catalyzes the hydrolysis of triglycerides from circulating chylomicrons and very low density lipoproteins (VLDL), and thereby plays an important role in lipid clearance from the blood stream, lipid utilization and storage.
Application Notes: LPL was immunoprecipitated from postheparin plasma using this antibody. The antibody was used both to capture LPL and to detect the bound LPL in a sandwich ELISA, indicating the epitope to be present in duplicate. In another sandwich ELISA analysis, the antibody was used to detect the LPL antigen (Peterson et al., 1992, PMID: 1279089). The antibody detected LPL from human, chicken and guinea pig by western blot analysis. The specificity of the original format of the antibody was confirmed by ELISA analysis (Chang et al., 1998; PMID: 9831623). Pretreatment of LPL with the antibody totally suppressed LPL-induced monocyte adhesion to endothelial cells (Mamputu et al., 1997; PMID: 9323582). Further, LDL was immunoneutralized with the antibody, totally suppressing LPL-induced VSMC proliferation (Mamputu et al., 2000; PMID: 11031206). Immunofluorescence was performed on LPL expressed on CHO-K1 cells using this antibody (Voss et al., 2011; PMID: 21518912). The binding affinity of the antibody to a synthetic LPL peptide containing the Trp-rich loop of human, mouse, bovine, rat and chicken, was measured by surface plasmon resonance.The binding affinity of the antibody to the human, bovine and chicken LPL peptides was high (KD of 0.19, 0.78 nM and 0.34 nM, respectively), the binding affinity for the rat LPL peptide was reduced (Kd= 2.99nM), and no binding to the Trp-rich peptide from mouse LPL was detected.

The antibody detected LPL by western blot analysis. By immunocytochemistry, the antibody bound avidly to the wildtype human LPL on CHO cells. The crystal structure of the Fab version of the antibody was solved (Luz et al., 2020; PMID: 32690595).

Antibody First Published in: Peterson et al. Human lipoprotein lipase: relationship of activity, heparin affinity, and conformation as studied with monoclonal antibodies J Lipid Res. 1992 Aug;33(8):1165-70. PMID:1279089

Note on publication: The paper describes the generation and characterization of the antibody. The antibody is used to investigate how conformational changes in lipoprotein lipase affect its molecular functions.

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^{o}C for up to 3 months. For longer storage, aliquot and store at -20^{o}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.