

#4856

Phospho-Perilipin (Ser522) Mouse Monoclonal Antibody



Background: Lipid droplets are coated with a layer of proteins that regulate their growth and metabolism. The major lipid droplet-associated protein in adipocytes is perilipin¹. Mice in which the endogenous gene for perilipin is knocked out have a lean phenotype due to reduced accumulation of fat^{2,3}, suggesting that perilipin may have a “gate-keeper” function under basal conditions to protect the triglycerides from metabolism by lipases. Upon activation of lipolytic pathways, perilipin is subject to phosphorylation at serine 497 and 522 by cyclic-AMP-dependent protein kinase, and phosphorylation of perilipin helps to recruit Hormone Sensitive Lipase (HSL) to the lipid droplets.

Immunogen: Monoclonal antibodies were produced by immunizing mice with a synthetic peptide corresponding to the carboxy terminus of the human perilipin sequence.

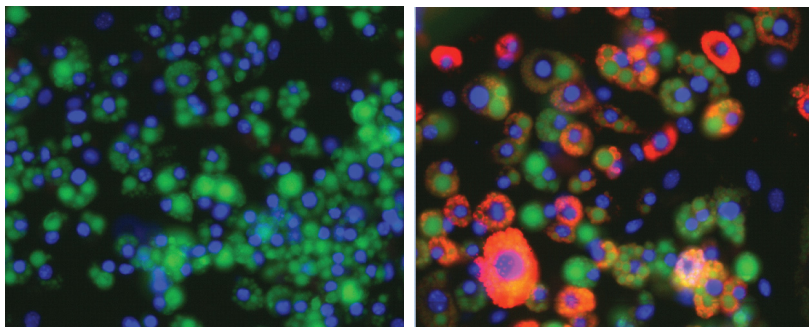
Subtype/Specificity: Murine IgG1, recognizes perilipin phosphorylated at Ser 522

Species Cross Reactivity: Tested successfully in Human, Mouse

Applications: Immunofluorescence, Western Blotting

Recommended Dilutions: Immunofluorescence 1:30
Western Blotting 1:5,000

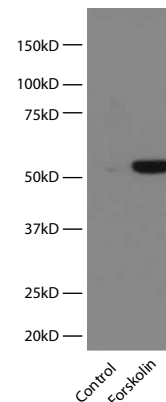
Storage: Store at 4°C



Control

Lys-3γ-MSH

Human Subcutaneous Adipocytes were incubated in the presence and absence of the lipolytic activator Lys-3γ-MSH prior to being stained for nuclei (blue), lipid droplets (green), and perilipin (red) using Vala Sciences' lipid droplets staining kit (Cat#4805) and mouse monoclonal antibody to phospho-perilipin (ser522) (Cat# 4856).



Western Blotting of protein extracts from 3T3L1 cells that were differentiated into adipocytes and treated with and without 6μM Forskolin. Mouse monoclonal antibody #4856 to phospho-perilipin (ser522) recognizes a distinct band at approx. 57Kd that corresponds to phosphorylation of perilipin due to forskolin treatment

Background References:

1. Bickel PE, Tansey JT, Welte MA. PAT proteins, an ancient family of lipid droplet proteins that regulate cellular lipid stores. *Biochim Biophys Acta*. Jun 2009;1791(6):419-440.
2. Tansey JT, Sztalryd C, Gruia-Gray J, et al. Perilipin ablation results in a lean mouse with aberrant adipocyte lipolysis, enhanced leptin production, and resistance to diet-induced obesity. *Proc Natl Acad Sci U S A*. May 22 2001;98(11):6494-6499.
3. Martinez-Botas J, Anderson JB, Tessier D, et al. Absence of perilipin results in leanness and reverses obesity in *Lepr(db/db)* mice. *Nat Genet*. Dec 2000;26(4):474-479.