

#4855

Phospho-Perilipin (Ser 497) Mouse Monoclonal Antibody

VALA
SCIENCES



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 region surrounding serine 497 of the human perilipin sequence.

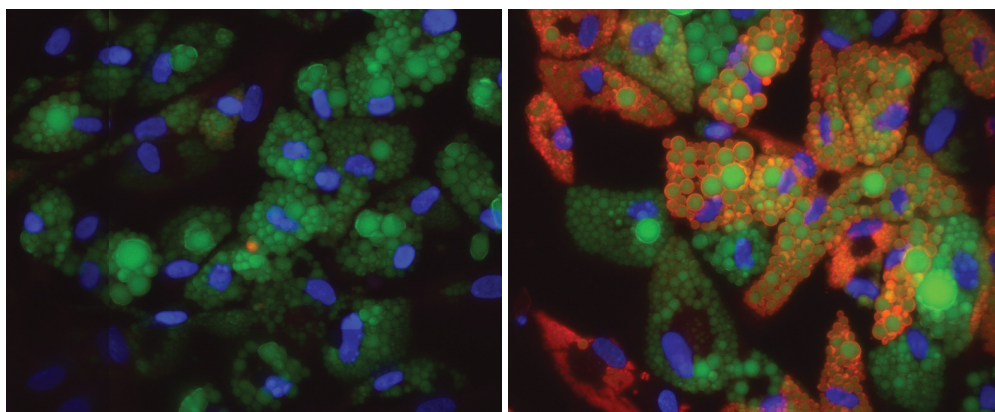
Subtype/Specificity: Murine IgG1, recognizes perilipin phosphorylated at serine 497

Species Cross Reactivity: Tested successfully in Human, Mouse

Applications: Immunofluorescence

Recommended Dilutions: Immunofluorescence 1:100

Storage: Store at 4°C



Control

Forskolin (6µM)

Human subcutaneous adipocytes where incubated in the absence (control, left panel) or presence (right panel) of the potent PKA activator Forskolin. Cells were stained for nuclei (blue), lipid droplets (green), and phospho-perilipin (Ser 497) (red) using Vala Sciences' lipid droplet staining kit (Cat#4805) and mouse monoclonal antibody to Phospho-perilipin (ser-497) (Cat# 4855).

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.