

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects a synthetic peptide specific for human PLIN-4 around amino acid 1085 in Direct ELISA.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 1114804
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Synthetic Peptide Accession # Q96Q06
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

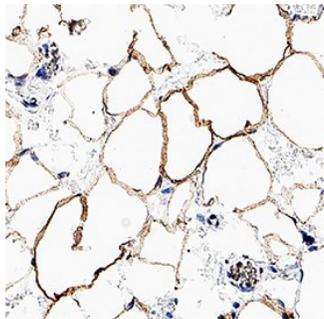
**APPLICATIONS**

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human breast

**DATA**

**Immunohistochemistry**



**Detection of Perilipin-4 in Human Breast.** Perilipin-4 was detected in immersion fixed paraffin-embedded sections of human breast using Mouse Anti-Human Perilipin-4 Monoclonal Antibody (Catalog # MAB11760) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to adipose. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
<b>Shipping</b>	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Perilipin-4 (PLIN4) is a member of the perilipin protein family, with a molecular weight of approximately 135 kDa. The perilipin family comprises lipid droplet-associated proteins that play key roles in lipid metabolism, storage, and mobilization within cells. PLIN4 is primarily expressed in adipose tissue and other lipid-storing cells, where it is localized to the surface of lipid droplets, protecting them from untimely lipolysis and promoting efficient lipid storage. It is thought to act in conjunction with other members of the perilipin family to regulate lipid droplet dynamics and lipid release in response to metabolic cues. PLIN4 is implicated in diverse biological processes, including energy homeostasis and thermogenesis, and alterations in its expression have been associated with metabolic disorders such as obesity, diabetes, and fatty liver disease. Additionally, dysregulation of PLIN4 has been linked to lipid accumulation in tissues, emphasizing its critical role in lipid metabolism and energy storage. Recent research suggests a growing potential for PLIN4 as a biomarker for metabolic disease and as a target for therapeutic interventions aimed at modulating lipid storage and metabolic health.

**References:**

1. Brasaemle DL, Dolios G, Shapiro L, Wang R. Proteomic analysis of proteins associated with lipid droplets of basal and lipolytically stimulated 3T3-L1 adipocytes. *J Biol Chem.* 2004 Nov 5;279(45):46835-42. doi: 10.1074/jbc.M409340200. Epub 2004 Aug 27. PMID: 15337753.
2. Kimmel AR, Sztalryd C. The Perilipins: Major Cytosolic Lipid Droplet-Associated Proteins and Their Roles in Cellular Lipid Storage, Mobilization, and Systemic Homeostasis. *Annu Rev Nutr.* 2016 Jul 17;36:471-509. doi: 10.1146/annurev-nutr-071813-105410. PMID: 27431369.
3. Sztalryd C, Brasaemle DL. The perilipin family of lipid droplet proteins: Gatekeepers of intracellular lipolysis. *Biochim Biophys Acta Mol Cell Biol Lipids.* 2017 Oct;1862(10 Pt B):1221-1232. doi: 10.1016/j.bbalip.2017.07.009. Epub 2017 Jul 25. PMID: 28754637; PMCID: PMC5595658.