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BM5051 Monoclonal Antibody to Adipophilin / ADFP (5-27) - Purified

Alternate names:	ADRP, Adipose differentiation-related protein
Quantity:	50 µg
Background:	Adipophilin / ADRP / PLIN 2 is a ubiquitous component of lipid droplets. It has been found in milk fat globule membranes and on the surface of lipid droplets in various cultured cell lines (see e.g. Heid et al. 1998; for review see e.g. Targett-Adams et al.); inducible by etomoxir. Enhanced expression of Adipophilin / ADRP / PLIN2 is a useful marker for pathologies characterized by increased lipid droplet accumulation. Such diseases include atheroma, steatosis, obesity and certain cases of liposarcoma. It also seems to be a potent marker for atherosclerosis. ADRP can also be used to study virus entry via lipid droplets (see e.g. Hope et al., Samsa et al.).
Uniprot ID:	Q99541
NCBI:	NP_001113.2
GeneID:	123
Host / Isotype:	Mouse / IgG1
Recommended Isotype Controls:	SM10P (for use in human samples), SM20P (for use in rat samples), AM03095PU-N
Clone:	AP125
Immunogen:	Synthetic peptide corresponding to aa 5-27 from N-terminus of Human Adipophilin.
Format:	**State:** Lyophilized purified IgG fraction **Purification:** Affinity Chromatography **Buffer System:** Final solution contains 0.09% Sodium Azide and 0.5% BSA in PBS buffer, pH 7.4 **Reconstitution:** Restore with 1.0 ml distilled water
Applications:	**Immunohistochemistry on Frozen Tissue:** 1/10 - 1/100 in PBS, pH 7.4 (See *Ohsaki et al.* for staining protocols). **Immunohistochemistry on Paraffin-Embedded Tissue:** 1/10 - 1/100 (After microwave treatment). Incubate 1 h at RT or over night at 2-8°C. (See *Straub et al.* 2008 for staining protocols). **Cytological Material.** **Immunoblotting (Western blot):** 0.2 µg/ml using ECL has been reported for previous batch numbers. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	**Polypeptide Reacting:** Adipophilin / ADRP, MW 48,100 (calculated from aa sequence data); apparent Mr 52,000 (after SDS-PAGE); pI 6.72. **Tissue Immunolocalization:** Adipophilin is positively detected in the glandular cells of lactating mammary gland (ductal cells are negative), zona fasciculata of the adrenal gland, Sertoli cells of the testis, and in fat-accumulating hepatocytes of alcoholic

cirrhotic fatty liver; adipocytes are negative. Also positively stained are lipid-storing CD 68-positive macrophages.
Tested Reactivity on Cultured Cell lines: Caco, PLC, HaCat, SV80, RD 125, Huvec (Human umbilical cord endothelia), RV, PC-12 (rat adrenal gland), MDCK. Negative with glioma.
Negative Species: Bovine and Mouse.

Species Reactivity:

Tested: Human, Rat and Canine (Dog). Also customer feedback for Monkey and Syrian Hamster. Does NOT react with bovine.

Storage:

Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations:

Purchased from Acris:

1. Enjoji M, Kohjima M, Ohtsu K, Matsunaga K, Murata Y, Nakamuta M, et al. Intracellular mechanisms underlying lipid accumulation (white opaque substance) in gastric epithelial neoplasms: A pilot study of expression profiles of lipid-metabolism-associated genes. J Gastroenterol Hepatol. 2015 Oct 29. doi: 10.1111/jgh.13216. PubMed PMID: 26513060.
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3. Hisabe T, Yao K, Imamura K, Ishihara H, Yamasaki K, Yasaka T, et al. Novel Endoscopic Findings as Visualized by Magnifying Endoscopy with Narrow-Band Imaging: White Opaque Substance Is Present in Colorectal Hyperplastic Polyps. Digestion. 2016;93(2):127-31. doi: 10.1159/000441841. Epub 2015 Dec 4. PubMed PMID: 26636961.
4. Králová A, Králová Lesná I, Froněk J, Čejková S, Sekerková A, Janoušek L, et al. Macrophage phenotypes in the adipose tissue of postmenopausal women. Physiol Res. 2015;64 Suppl 3:S427-33. PubMed PMID: 26680677.
5. Imamura, K; Yao, K; Hisabe, T; Nambu, M; Ohtsu, K; Ueo, T; Yano, S; Ishihara, H; Nagahama, T; Kanemitsu, T, Yamasaki, K;Matsui, T;Tanabe, H;Iwashita, A;Daa, T;Yokoyama, S;Matsunaga, K;Enjoji, M. The nature of the white opaque substance within colorectal neoplastic epithelium as visualized by magnifying endoscopy with narrow-band imaging. Endosc Int Open 2016; 04(11): E1151-E1157. DOI: 10.1055/s-0042-116487.

Originator or purchased from resellers:

1. Straub BK, Stoeffel P, Heid H, Zimbelmann R, Schirmacher P. Differential pattern of lipid droplet-associated proteins and de novo perilipin expression in hepatocyte steatogenesis. Hepatology. 2008 Jun;47(6):1936-46. doi: 10.1002/hep.22268. PubMed PMID: 18393390. (use on paraffin sections)
2. Ohsaki Y, Maeda T, Fujimoto T. Fixation and permeabilization protocol is critical for the immunolabeling of lipid droplet proteins. Histochem Cell Biol. 2005

Nov;124(5):445-52. Epub 2005 Nov 3. PubMed PMID: 16151827. (use on frozen section)

General Readings:

1. Heid HW, Moll R, Schwetlick I, Rackwitz HR, Keenan TW. Adipophilin is a specific marker of lipid accumulation in diverse cell types and diseases. Cell Tissue Res. 1998 Nov;294(2):309-21. PubMed PMID: 9799447.
2. Heid HW, Schnölzer M, Keenan TW. Adipocyte differentiation-related protein is secreted into milk as a constituent of milk lipid globule membrane. Biochem J. 1996 Dec 15;320 (Pt 3):1025-30. PubMed PMID: 9003395.
3. Mrozinzki J, SchwetlicK I, Heid HW, Winter-Simanowski S, Holzbach A, Hinze R, Franke WW and Moll R. Adipophilin and perilipin, two lipid droplet-associated proteins, in the pathohistological differential diagnosis of human soft tissue sarcomas. Abstract from AEK meeting 1999, German Cancer Research Center. J Cancer Res & Clin Oncol 125 suppl (1999)
4. Than NG, Sumegi B, Than GN, Kispal G, Bohn H. Cloning and sequencing of human oncodevelopmental soluble placental tissue protein 17 (PP17): homology with adipophilin and the mouse adipose differentiation-related protein. Tumour Biol. 1999 Jul-Aug;20(4):184-92. PubMed PMID: 10393528.
5. Hope RG, McLauchlan J. Sequence motifs required for lipid droplet association and protein stability are unique to the hepatitis C virus core protein. J Gen Virol. 2000 Aug;81(Pt 8):1913-25. PubMed PMID: 10900028.
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10. Fukumoto S, Fujimoto T. Deformation of lipid droplets in fixed samples. Histochem Cell Biol. 2002 Nov;118(5):423-8. Epub 2002 Oct 2. PubMed PMID: 12432454.
11. Targett-Adams P, Chambers D, Gledhill S, Hope RG, Coy JF, Girod A, et al. Live cell analysis and targeting of the lipid droplet-binding adipocyte differentiation-related protein. J Biol Chem. 2003 May 2;278(18):15998-6007. Epub 2003 Feb 18. PubMed PMID: 12591929.
12. Bulankina AV: TIP47 is recruited to lipid droplets and important for the organelle biogenesis and function. PhD Thesis University of Goettingen (2003)
13. Opretzka, ME: Topographie und Dynamik von Perilipin und Adipophilin in Lipidtropfen. PhD Thesis, University of Muenster/Germany (2005)
14. Eisenberg, M: Die Regulation der Adipophilin-Expression. . PhD Thesis, University of Muenster/Germany (2005)
15. Robenek H, Lorkowski S, Schnoor M, Troyer D. Spatial integration of TIP47 and adipophilin in macrophage lipid bodies. J Biol Chem. 2005 Feb 18;280(7):5789-94.

Epub 2004 Nov 15. PubMed PMID: 15545278.
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17. Ohsaki Y, Maeda T, Fujimoto T. Fixation and permeabilization protocol is critical for the immunolabeling of lipid droplet proteins. Histochem Cell Biol. 2005 Nov;124(5):445-52. Epub 2005 Nov 3. PubMed PMID: 16151827.
18. Robenek H, Hofnagel O, Buers I, Robenek MJ, Troyer D, Severs NJ. Adipophilin-enriched domains in the ER membrane are sites of lipid droplet biogenesis. J Cell Sci. 2006 Oct 15;119(Pt 20):4215-24. Epub 2006 Sep 19. PubMed PMID: 16984971.
19. Muthusamy K, Halbert G, Roberts F. Immunohistochemical staining for adipophilin, perilipin and TIP47. J Clin Pathol. 2006 Nov;59(11):1166-70. Epub 2006 Mar 23. PubMed PMID: 16556662.
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