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O3FAR1 / GPR120 Antibody (N-Terminus)
Rabbit Polyclonal Antibody
Catalog # ALS10488

Specification

O3FAR1 / GPR120 Antibody (N-Terminus) - Product Information

Application	**IHC-P**
Primary Accession	Q5NUL3
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**42kDa KDa**
Dilution	**IHC-P~~N/A**

O3FAR1 / GPR120 Antibody (N-Terminus) - Additional Information

Gene ID 338557

Other Names
Free fatty acid receptor 4, G-protein coupled receptor 120, G-protein coupled receptor 129, G-protein coupled receptor GT01, G-protein coupled receptor PGR4, Omega-3 fatty acid receptor 1, FFAR4, GPR120, GPR129, O3FAR1, PGR4

Target/Specificity
Human O3FAR1 / GPR120. BLAST analysis of the peptide immunogen showed no homology with other human proteins, except TFE3 (40%).

Reconstitution & Storage
Long term: -70°C; Short term: +4°C

Precautions
O3FAR1 / GPR120 Antibody (N-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

O3FAR1 / GPR120 Antibody (N-Terminus) - Protein Information

Name FFAR4 (HGNC:19061)

Function
[Isoform 2]: G-protein-coupled receptor for long-chain fatty acids (LCFAs) with a major role in adipogenesis, energy metabolism and inflammation. Signals via G-protein and beta-arrestin pathways (PubMed:22282525, PubMed:22343897, PubMed:24742677, PubMed:24817122, PubMed:27852822). LCFAs sensing initiates activation of phosphoinositidase C-linked G proteins GNAQ and GNA11 (G(q)/G(11)), inducing a variety of cellular responses via

second messenger pathways such as intracellular calcium mobilization, modulation of cyclic adenosine monophosphate (cAMP) production, and mitogen-activated protein kinases (MAPKs) (PubMed:22282525, PubMed:22343897, PubMed:24742677, PubMed:27852822). After LCFAs binding, associates with beta-arrestin ARRB2 that acts as an adapter protein coupling the receptor to specific downstream signaling pathways, as well as mediating receptor endocytosis (PubMed:22282525, PubMed:24817122). In response to dietary fats, plays an important role in the regulation of adipocyte proliferation and differentiation (By similarity). Acts as a receptor for omega-3 polyunsaturated fatty acids (PUFAs) at primary cilium of perivascular preadipocytes, initiating an adipogenic program via cAMP and CTCF-dependent chromatin remodeling that ultimately results in transcriptional activation of adipogenic genes and cell cycle entry (By similarity). Induces differentiation of brown adipocytes probably via autocrine and endocrine functions of FGF21 hormone (By similarity). Activates brown adipocytes by initiating intracellular calcium signaling that leads to mitochondrial depolarization and fission, and overall increased mitochondrial respiration (By similarity). Consequently stimulates fatty acid uptake and oxidation in mitochondria together with UCP1-mediated thermogenic respiration, eventually reducing fat mass (By similarity). Regulates bi-potential differentiation of bone marrow mesenchymal stem cells toward osteoblasts or adipocytes likely by up-regulating distinct integrins (By similarity). In response to dietary fats regulates hormone secretion and appetite (By similarity). Stimulates GIP and GLP1 secretion from enteroendocrine cells as well as GCG secretion in pancreatic alpha cells, thereby playing a role in the regulation of blood glucose levels (By similarity). Negatively regulates glucose- induced SST secretion in pancreatic delta cells (By similarity). Mediates LCFAs inhibition of GHRL secretion, an appetite-controlling hormone (By similarity). In taste buds, contributes to sensing of dietary fatty acids by the gustatory system (By similarity). During the inflammatory response, promotes anti-inflammatory M2 macrophage differentiation in adipose tissue (By similarity). Mediates the anti- inflammatory effects of omega-3 PUFAs via inhibition of NLRP3 inflammasome activation (PubMed:23809162). In this pathway, interacts with adapter protein ARRB2 and inhibits the priming step triggered by Toll-like receptors (TLRs) at the level of TAK1 and TAB1 (By similarity). Further inhibits the activation step when ARRB2 directly associates with NLRP3, leading to inhibition of pro-inflammatory cytokine release (PubMed:23809162). Mediates LCFAs anti-apoptotic effects (By similarity).

Cellular Location
[Isoform 1]: Cell membrane; Multi-pass membrane protein. Endosome membrane; Multi- pass membrane protein. Lysosome membrane; Multi-pass membrane protein. Note=Sorted to late endosome/lysosome compartments upon internalization.

Tissue Location
[Isoform 2]: The predominant isoform in human tissues. Expressed in adipose tissue, pancreatic islets, lung and brain. Expressed in alpha cells of pancreatic islets (PubMed:24742677) Expressed in primary cilia of perivascular preadipocytes of white adipose tissue (at protein level) (PubMed:31761534)

Volume
50 µl

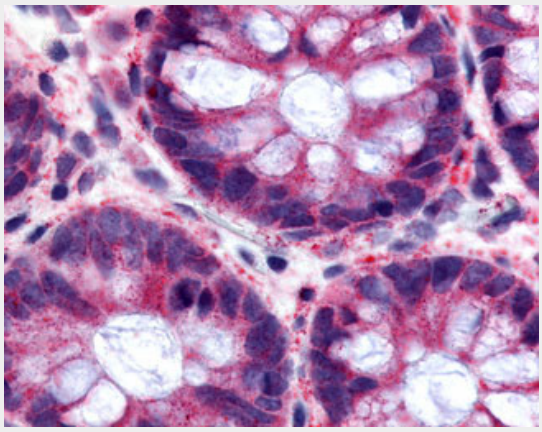
O3FAR1 / GPR120 Antibody (N-Terminus) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot

- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

O3FAR1 / GPR120 Antibody (N-Terminus) - Images



Anti-O3FAR1 / GPR120 antibody ALS10488 IHC of human colon.

O3FAR1 / GPR120 Antibody (N-Terminus) - Background

Receptor for medium and long-chain free fatty acids (FFAs). Signals via a G(q)/G(11)-coupled pathway. Acts as a receptor for omega-3 fatty acids and mediates robust anti- inflammatory effects, particularly in macrophages and fat cells. The anti-inflammatory effects involve inhibition of TAK1 through a beta-arrestin 2 (ARRB2)/TAB1-dependent effect, but independent of the G(q)/G(11)-coupled pathway. Mediates potent insulin sensitizing and antidiabetic effects by repressing macrophage- induced tissue inflammation. May mediate the taste of fatty acids. Mediates FFA-induced inhibition of apoptosis in enteroendocrine cells. May play a role in the regulation of adipocyte development and differentiation.

O3FAR1 / GPR120 Antibody (N-Terminus) - References

Fredriksson R.,et al.FEBS Lett. 554:381-388(2003).
Hirasawa A.,et al.Nat. Med. 11:90-94(2005).
Deloukas P.,et al.Nature 429:375-381(2004).
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Vassilatis D.K.,et al.Proc. Natl. Acad. Sci. U.S.A. 100:4903-4908(2003).