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# O3FAR1 / GPR120 Antibody (aa226-284)

**Rabbit Polyclonal Antibody**
**Catalog # ALS17062**

## Specification

### O3FAR1 / GPR120 Antibody (aa226-284) - Product Information

| | |
|---|---|
| Application | **IHC, WB** |
| Primary Accession | Q5NUL3 |
| Other Accession | 338557 |
| Reactivity | **Human, Mouse, Rat** |
| Host | **Rabbit** |
| Clonality | **Polyclonal** |
| Calculated MW | **40494** |

### O3FAR1 / GPR120 Antibody (aa226-284) - Additional Information

**Gene ID** 338557

**Other Names**
FFAR4, Free fatty acid receptor 4, GT01, GPR129, GPR120, O3FAR1, PGR4, BMIQ10

**Target/Specificity**
Human O3FAR1 / GPR120

**Reconstitution & Storage**
PBS, pH 7.2, 0.05% sodium azide. Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze-thaw cycles.

**Precautions**
O3FAR1 / GPR120 Antibody (aa226-284) is for research use only and not for use in diagnostic or therapeutic procedures.

### O3FAR1 / GPR120 Antibody (aa226-284) - 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:<a href="http://www.uniprot.org/citations/22282525" target="_blank">22282525</a>, PubMed:<a href="http://www.uniprot.org/citations/24742677" target="_blank">24742677</a>, PubMed:<a href="http://www.uniprot.org/citations/27852822" target="_blank">27852822</a>, PubMed:<a href="http://www.uniprot.org/citations/24817122" target="_blank">24817122</a>, PubMed:<a href="http://www.uniprot.org/citations/22343897" target="_blank">22343897</a>). 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:<a href="http://www.uniprot.org/citations/27852822" target="_blank">27852822</a>, PubMed:<a href="http://www.uniprot.org/citations/22343897" target="_blank">22343897</a>, PubMed:<a href="http://www.uniprot.org/citations/22282525" target="_blank">22282525</a>, PubMed:<a href="http://www.uniprot.org/citations/24742677" target="_blank">24742677</a>). 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:<a href="http://www.uniprot.org/citations/22282525" target="_blank">22282525</a>, PubMed:<a href="http://www.uniprot.org/citations/24817122" target="_blank">24817122</a>). 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:<a href="http://www.uniprot.org/citations/23809162" target="_blank">23809162</a>). 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:<a href="http://www.uniprot.org/citations/23809162" target="_blank">23809162</a>). 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 (aa226-284) - Protocols

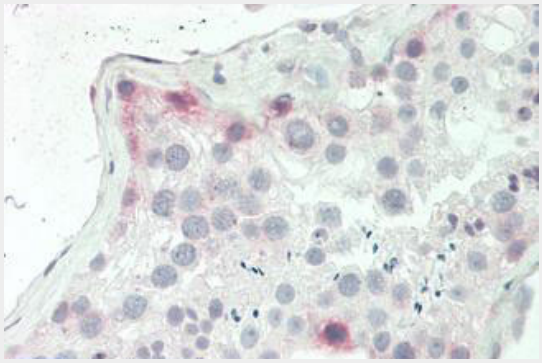
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides

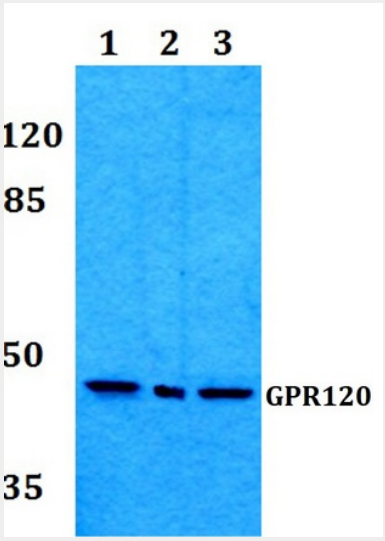
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- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

**O3FAR1 / GPR120 Antibody (aa226-284) - Images**



Human Testis: Formalin-Fixed, Paraffin-Embedded (FFPE)




Western blot analysis of GPR120 Antibody at 1:500 dilution.

**O3FAR1 / GPR120 Antibody (aa226-284) - 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 (aa226-284) - 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).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Vassilatis D.K.,et al.Proc. Natl. Acad. Sci. U.S.A. 100:4903-4908(2003).