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Anti-GDF15 Antibody

Catalog # AP60075

Product Information

Application	WB, IF/IC
Primary Accession	Q99988
Reactivity	Human, Pig, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	34140

Additional Information

Gene ID	9518
Other Names	MIC1; PDF; PLAB; PTGFB; Growth/differentiation factor 15; GDF-15; Macrophage inhibitory cytokine 1; MIC-1; NSAID-activated gene 1 protein; NAG-1; NSAID-regulated gene 1 protein; NRG-1; Placental TGF-beta; Placental bone morphogenetic protein; Prostate differentiation factor
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human GDF15. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	GDF15 {ECO:0000303|PubMed:23468844, ECO:0000312|HGNC:HGNC:30142}
Function	Hormone produced in response to various stresses to confer information about those stresses to the brain, and trigger an aversive response, characterized by nausea, vomiting, and/or loss of appetite (PubMed:23468844, PubMed:24971956, PubMed:28846097, PubMed:28846098, PubMed:28846099, PubMed:28953886, PubMed:29046435, PubMed:30639358, PubMed:31875646, PubMed:33589633, PubMed:38092039). The aversive response is both required to reduce continuing exposure to those stresses at the time of exposure and to promote avoidance behavior in the future (PubMed:30639358, PubMed:33589633, PubMed:38092039). Acts by binding to its receptor, GFRAL, activating GFRAL-expressing neurons localized in the area postrema and nucleus tractus solitarius of the brainstem

(PubMed:28846097, PubMed:28846098, PubMed:28846099, PubMed:28953886, PubMed:31535977). It then triggers the activation of neurons localized within the parabrachial nucleus and central amygdala, which constitutes part of the 'emergency circuit' that shapes responses to stressful conditions (PubMed:28953886). The GDF15-GFRAL signal induces expression of genes involved in metabolism, such as lipid metabolism in adipose tissues (PubMed:31402172). Required for avoidance behavior in response to food allergens: induced downstream of mast cell activation to promote aversion and minimize harmful effects of exposure to noxious substances (By similarity). In addition to suppress appetite, also promotes weight loss by enhancing energy expenditure in muscle: acts by increasing calcium futile cycling in muscle (By similarity). Contributes to the effect of metformin, an anti-diabetic drug, on appetite reduction and weight loss: produced in the kidney in response to metformin treatment, thereby activating the GDF15-GFRAL response, leading to reduced appetite and weight (PubMed:31875646, PubMed:37060902). The contribution of GDF15 to weight loss following metformin treatment is however limited and subject to discussion (PubMed:36001956). Produced in response to anticancer drugs, such as camptothecin or cisplatin, promoting nausea, vomiting and contributing to malnutrition (By similarity). Overproduced in many cancers, promoting anorexia in cancer (cachexia) (PubMed:32661391). Responsible for the risk of nausea and vomiting during pregnancy: high levels of GDF15 during pregnancy, mostly originating from the fetus, are associated with increased nausea and vomiting (PubMed:38092039). Maternal sensitivity to nausea is probably determined by pre-pregnancy exposure to GDF15, women with naturally high level of GDF15 being less susceptible to nausea than women with low levels of GDF15 before pregnancy (PubMed:38092039). Promotes metabolic adaptation in response to systemic inflammation caused by bacterial and viral infections in order to promote tissue tolerance and prevent tissue damage (PubMed:31402172). Required for tissue tolerance in response to myocardial infarction by acting as an inhibitor of leukocyte integring activation, thereby protecting against cardiac rupture (By similarity). Inhibits growth hormone signaling on hepatocytes (By similarity).

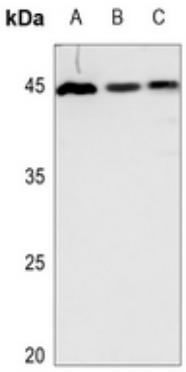
Cellular Location

Secreted Note=Secreted in the plasma.

Tissue Location

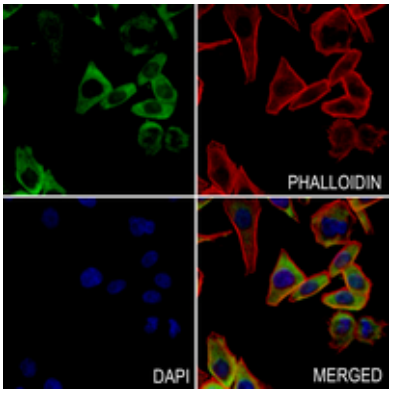
Detected in plasma (at protein level) (PubMed:28572090, PubMed:29046435). Highly expressed in placenta, with lower levels in prostate and colon and some expression in kidney (PubMed:37060902, PubMed:9348093).

Images



Western blot analysis of GDF15 expression in HEK293T (A), A549 (B), K562 (C) whole cell lysates. (Predicted band size: 34 kD; Observed band size: 45 kD)

Immunofluorescent analysis of GDF15 staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3%



BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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