

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Osteoactivin/GPNMB in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse Osteoactivin/GPNMB is observed.
Source	Monoclonal Mouse IgG _{2A} Clone # 303802
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Osteoactivin/GPNMB isoform 2 Ala22-Asn486 Accession # NP_002501
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Osteoactivin (also GPNMB and DC-HIL) is a variably glycosylated 75-125 kDa member of the NMB/pMEL-17 family of molecules. It is found in multiple subcellular sites, but is most often associated with the endosomal/lysosomal compartment (1, 2, 3). Human Osteoactivin is a 560 amino acid (aa) type I transmembrane protein. Its precursor contains a 21 aa signal sequence, a 465 aa luminal/extracellular domain, a 21 aa transmembrane segment and a 53 aa cytoplasmic tail (4, 5). The luminal region contains an N-terminal heparin-binding motif (aa 23-26), multiple glycosylation sites, an RGD motif (aa 64-66) and an 88 aa PKD domain (aa 240-327). The intracellular tail has an ITAM (Y-x-x-l) and lysosomal targeting (L-L) motif (4, 5). The extracellular/luminal region shares 74% and 77% aa identity with the equivalent regions in mouse and canine, respectively. Multiple isoforms would appear to exist. There is one alternate splice form known that shows a 12 aa insert between aa 339-340 (6). An additional 206 aa isoform shows a mutation at position # 181 that results in a 26 aa substitution for the C-terminal 380 amino acids (7, 8). This has the potential to be soluble and may represent a counterpart to a secreted isoform of rat Osteoactivin (9). Cells known to express Osteoactivin include macrophages/Kupffer cells, fibroblasts, osteoblasts, myeloid dendritic cells, retinal pigment epithelial cells and melanocytes, plus fetal chondrocytes and stratum basale keratinocytes (3, 4, 5, 10, 11, 12). In mice, Osteoactivin is reported to bind to heparan sulfate-proteoglycan, possibly on the surface of endothelial cells and may also interact with integrins (13). It also appears to act as an inflammatory suppressor gene, as its expression downregulates the macrophage inflammatory response by inhibiting IL-6 and IL-12p40 production (3).

PRODUCT SPECIFIC NOTICES

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