

Rabbit anti-Human, Mouse OMD Polyclonal Antibody | anti-OMD antibody

Anti-OMD Antibody Picoband

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA127292	Rabbit	Human, Mouse	Western Blot, Flow Cytometry, Functional Assay, ELISA

PRODUCT SYNONYMS

OMD; Polyclonal Antibody; Anti-OMD Antibody Picoband; Zinc finger protein Helios; aryl hydrocarbon receptor nuclear translocator like 2; Cytoskeleton-associated protein 5; Colonic and hepatic tumor overexpressed gene protein; Ch-TOG; CKAP5; KIAA0097; anti-OMD antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Expressed in fetal brain.Highly expressed in brain and placenta. Lower levels in heart, liver, thymus, kidney and lung. Located to endothelial cells and neuronal cells of the suprachiasmatic nucleus (SCN). Also detected in endothelial cells of the heart, lung and kidney. In the brain, specificallyExpressed in the thalamus, hippocampus and amygdala.
Purity/Purification	Immunogen affinity purified.
Form/Format	Lyophilized. Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
Applicable Applications for anti-OMD antibody	WB (Western Blot), FCM/FACS (Flow Cytometry), ELISA
Immunogen	E coli-derived human OMD recombinant protein (Position: D37-E344).
Subcellular Localization	Nucleus
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500ug/ml.
Cross Reactivity	No cross-reactivity with other proteins.

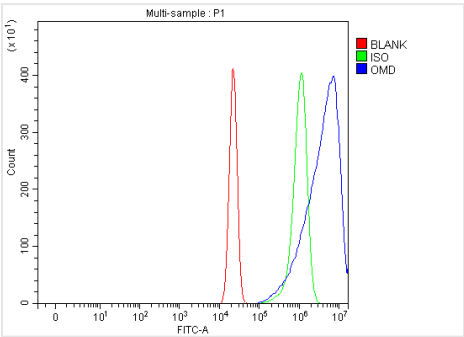
Protein Function

Transcriptional activator which forms a core component of the circadian clock. The circadian clock, an internal time-keeping system, regulates various physiological processes through the generation of approximately 24 hour circadian rhythms in gene expression, which are translated into rhythms in metabolism and behavior. It is derived from the Latin roots 'circa' (about) and 'diem' (day) and acts as an important regulator of a wide array of physiological functions including metabolism, sleep, body temperature, blood pressure, endocrine, immune, cardiovascular, and renal function. Consists of two major components: the central clock, residing in the suprachiasmatic nucleus (SCN) of the brain, and the peripheral clocks that are present in nearly every tissue and organ system. Both the central and peripheral clocks can be reset by environmental cues, also known as Zeitgebers (German for 'timegivers'). The predominant Zeitgeber for the central clock is light, which is sensed by retina and signals ly to the SCN. The central clock entrains the peripheral clocks through neuronal and hormonal signals, body temperature and feeding-related cues, aligning all clocks with the external light/dark cycle. Circadian rhythms allow an organism to achieve temporal homeostasis with its environment at the molecular level by regulating gene expression to create a peak of protein expression once every 24 hours to control when a particular physiological process is most active with respect to the solar day. Transcription and translation of core clock components (CLOCK, NPAS2, ARNTL/BMAL1, ARNTL2/BMAL2, PER1, PER2, PER3, CRY1 and CRY2) plays a critical role in rhythm generation, whereas delays imposed by post-translational modifications (PTMs) are important for determining the period (tau) of the rhythms (tau refers to the period of a rhythm and is the length, in time, of one complete cycle). A diurnal rhythm is synchronized with the day/night cycle, while the ultradian and infradian rhythms have a period shorter and longer than 24 hours, respectively. Disruptions in the circadian rhythms contribute to the pathology of cardiovascular diseases, cancer, metabolic syndromes and aging. A transcription/translation feedback loop (TTFL) forms the core of the molecular circadian clock mechanism. Transcription factors, CLOCK or NPAS2 and ARNTL/BMAL1 or ARNTL2/BMAL2, form the positive limb of the feedback loop, act in the form of a heterodimer and activate the transcription of core clock genes and clock-controlled genes (involved in key metabolic processes), harboring E-box elements (5'-CACGTG-3') within their promoters. The core clock genes: PER1/2/3 and CRY1/2 which are transcriptional repressors form the negative limb of the feedback loop and interact with the CLOCK|NPAS2-ARNTL/BMAL1|ARNTL2/BMAL2 heterodimer inhibiting its activity and thereby negatively regulating their own expression. This heterodimer also activates nuclear receptors NR1D1/2 and RORA/B/G, which form a second feedback loop and which activate and repress ARNTL/BMAL1 transcription, respectively. The CLOCK-ARNTL2/BMAL2 heterodimer activates the transcription of SERPINE1/PAI1 and BHLHE40/DEC1.

Preparation and Storage

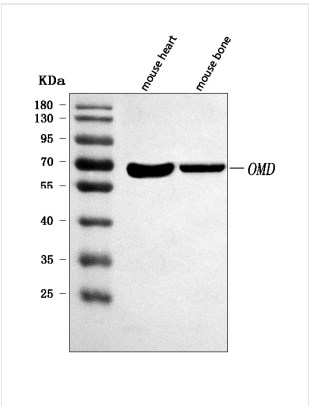
At -20 degree C for one year from date of receipt. After reconstitution, at 4 degree C for one month. It can also be aliquotted and stored frozen at -20 degree C for six months.Avoid repeated freezing and thawing.

IMAGES



FCM/FACS (Flow Cytometry)

Figure 2. Flow Cytometry analysis of U2OS cells using anti-OMD antibody (AAA127292).Overlay histogram showing U2OS cells stained with AAA127292 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-OMD Antibody (AAA127292, 1ug/1x106 cells) for 30 min at 20 degree C. DyLight488 conjugated goat anti-rabbit IgG was used as secondary antibody for 30 minutes at 20 degree C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



WB (Western Blot)

Figure 1. Western blot analysis of OMD using anti-OMD antibody (AAA127292).Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel)/90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.Lane 1: mouse heart tissue lysates,Lane 2: mouse bone tissue lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-OMD antigen affinity purified polyclonal antibody (#AAA127292) at 0.5ug/mL overnight at 4 degree C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit with Tanon 5200 system. A specific band was detected for OMD at approximately 60 kDa. The expected band size for OMD is at 49 kDa.

ADDITIONAL INFORMATION

Related Product Information for anti-OMD antibody	The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Product Categories/Family for anti-OMD antibody	Primary Antibodies; Cardiogenesis; Cardiovascular; Domain Families; Epigenetics and Nuclear Signaling; Hlh/Leucine Zipper; Neurology Process; Neuroscience; Receptors; Transcription; Transcription Factors; Transcription Factors/Regulators
References	1. Buchaille, R., Couble, M. L., Magloire, H., Bleicher, F. Expression of the small leucine-rich proteoglycan osteoadherin/osteomodulin in human dental pulp and developing rat teeth. Bone 27: 265-270, 20002. Gross, M. B. Personal Communication. Baltimore, Md. 6/25/2020.3. Lin, W., Gao, L., Jiang, W., Niu, C., Yuan, K., Hu, X., Ma, R., Huang, Z. The role of osteomodulin on osteo/odontogenic differentiation in human dental pulp stem cells. BMC Oral Health 19: 22, 2019. Note: Electrtonic Article.

NCBI AND UNIPROT INFORMATION

NCBI GI #	4826876
NCBI GeneID	4958
NCBI Accession #	NP_005005
NCBI GenBank Nucleotide #	NM_005014
UniProt Accession #	Q99983; Q5TBF4
Molecular Weight	49,492 Da
NCBI Official Full Name	osteomodulin
NCBI Official Synonym Full Names	osteomodulin
NCBI Official Symbol	OMD
NCBI Official Synonym Symbols	OSAD; SLRR2C
NCBI Protein Information	osteomodulin; KSPG osteomodulin; keratan sulfate proteoglycan osteomodulin; osteoadherin proteoglycan
UniProt Protein Name	Osteomodulin
UniProt Gene Name	OMD
UniProt Synonym Gene Names	SLRR2C; KSPG osteomodulin; OSAD
UniProt Entry Name	OMD_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/omd-antibody-western-blot-flow-cytometry-elisa/127292>