

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse DMP-1 in direct ELISAs and Western blots. In direct ELISAs, approximately 25% cross-reactivity with recombinant human DMP-1 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse DMP-1 Leu17-Tyr503 Accession # Q2HJ09
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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.
Immunohistochemistry	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

Dentin matrix protein 1 (DMP-1) is a member of the SIBLING family of proteins that includes bone sialoprotein, dentin sialophosphoprotein, MEPE, and osteopontin. These are highly phosphorylated integrin-binding proteins that are rich in acidic amino acids and function in the formation of calcified bone and tooth matrix (1, 2). Its phosphate content, spacing of acidic residues, and calcium-dependent dimerization of DMP-1 contribute to its ability to sequester calcium phosphate clusters and promote hydroxyapatite (HA) crystal formation (3-5). Mature mouse DMP-1 is 487 amino acids (aa) in length. It contains a poly-Pro segment (aa 41-44) and an RGD binding motif (aa 350-352). DMP-1 may be cleaved by BMP-1 family proteases at a single site which is conserved in human, generating a 37 kDa N-terminal (aa 17-212) and a 57 kDa C-terminal (aa 213-503) fragment (6). The N-terminal fragment in rat carries chondroitin sulfate (7). The C-terminal fragment alone can nucleate HA crystals, while crystal growth into a needle-like morphology is inhibited by the N-terminal fragment (3, 4). Crystal maturation is dependent on the presence of type I collagen (4). DMP-1 is required for odontoblast differentiation as well as dentin formation (8). Unphosphorylated DMP-1 is retained intracellularly where it is targeted to the nucleus. Here, it activates the transcription of odontoblast and osteoblast specific genes (9, 10). Early in osteoblast maturation, nuclear DMP-1 is extensively phosphorylated by casein kinase II, triggering its secretion (9). DMP-1 mutations in humans are associated with hypophosphatemia and FGF-23 over-expression (11, 12). DMP-1 induces the activation of pro-MMP-9 and displaces mature MMP-9 from TIMP1 (13). DMP-1 tethers MMP-9 to the cell surface via CD44 and integrins α V β 3 and α V β 5, promoting tumor cell invasiveness *in vitro* (14). Full length DMP-1 circulates in human serum in a tight complex with complement factor H (13, 14). When first bound to CD44 or integrin α V β 3, DMP-1 can anchor factor H to the cell surface and protect the cell from complement-mediated lysis (15). Mature mouse DMP-1 shares 63%, 61%, and 87% aa sequence identity with bovine, human, and rat DMP-1, respectively.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.