

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human PTH in direct ELISAs.
Source	Monoclonal Mouse IgG _{2B} Clone # 918462
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human PTH Ser32-Gln115 Accession # P01270
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 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

PTH (Parathyroid Hormone) is a critical hormone in the regulation of Ca⁺⁺ homeostasis (1). The human PTH cDNA encodes 115 amino acids (aa) including a 25 aa signal sequence, a 6 aa propeptide, and an 84 aa mature hormone. Mature human PTH shares 70%, 73%, 88%, 87%, 86%, 86% and 85% aa identity with mouse, rat, canine, equine, bovine, porcine and feline PTH, respectively. Multiple N-terminal peptides and C-terminal peptides derived from PTH occur naturally in the circulation (1). PTH aa 32-66, called PTH (1-34) since it represents the first 34 aa of the mature hormone, reproduces all the activity of the full length mature hormone and has been used therapeutically for treatment of osteoporosis (1-3). C-terminal peptides mainly oppose the activities of PTH (1-34) and are increased in renal failure (1-3). PTH expression is mainly restricted to the parathyroid gland, with minor amounts in the thymus (4). PTH secretion is enhanced by low Ca⁺⁺ concentrations and inhibited by FGF-23 (1, 5). In normal human plasma, PTH correlates negatively with active Vitamin D and positively with ionized calcium (6). Human and other mammalian PTH will bind and stimulate human or rat PTH1R, activating adenylate cyclase and increasing cAMP production (2, 7). PTH promotes secretion of TRANCE/RANKL and periostin through PTH1R binding on osteoblasts and/or bone marrow stromal cells (8-10). TRANCE/RANKL induces differentiation of osteoclasts, which in turn promote release of Ca⁺⁺ from bone (1, 8, 9). PTH1R on osteocytes, however, allows PTH to promote bone formation and IGF-1 production (11, 12). In renal epithelium, PTH promotes conversion of Vitamin D to its active form, lowers Ca⁺⁺ excretion and increases phosphate excretion (1, 2, 9). PTH also increases hematopoietic stem cell proliferation and mobilization and induces arterial vasodilation by regulating Ca⁺⁺ influx in PTH1R-expressing arterial smooth muscle (8, 13).

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