Human PTH Antibody

Monoclonal Mouse IgG_{2B} Clone # 918462

Catalog Number: MAB7665

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	*E. coli*-derived recombinant human PTH Ser32-Gln115 Accession # P01270
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

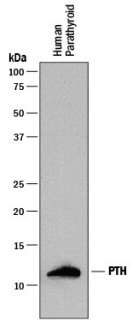
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below

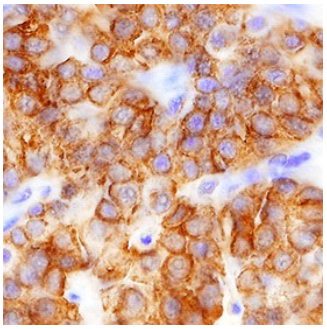
DATA

Western Blot



Detection of Human PTH by Western Blot. Western blot shows lysates of human parathyroid tissue. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human PTH Monoclonal Antibody (Catalog # MAB7665) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for PTH at approximately 12 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



PTH in Human Parathyroid Gland. PTH was detected in immersion fixed paraffin-embedded sections of human parathyroid gland using Mouse Anti-Human PTH Monoclonal Antibody (Catalog # MAB7665) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to cell membranes. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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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).

References:

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