10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Parathyroid Hormone (PTH) (N-Terminal) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone SPM604]
Catalog # AH12149

Product Information

Application	IHC, IF, FC
Primary Accession	P01270
Other Accession	5741, 37045
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2b, kappa
Clone Names	SPM604
Calculated MW	12861

Additional Information

Gene ID	5741
Other Names	Parathyroid hormone, PTH, Parathormone, Parathyrin, PTH
Application Note	IHC~~1:100~500 IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Parathyroid Hormone (PTH) (N-Terminal) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PTH {ECO:0000303|PubMed:35932760, ECO:0000312|HGNC:HGNC:9606}
Function	Peptide hormone secreted by parathyroid chief cells that acts as a primary endocrine regulator of extracellular calcium and phosphate homeostasis, acting primarily on bone and kidney to maintain serum calcium levels within a narrow range (PubMed:11604398, PubMed:35932760). Acts by binding and activating the G protein-coupled receptor PTH1R, engaging the receptor to activate G(s)-mediated cAMP/PKA signaling and G(q)-mediated PLC/PKC signaling (PubMed:18375760, PubMed:35932760). In bone, acts indirectly on osteoclasts by binding PTH1R on cells of the osteoblast/osteocyte lineage, where it increases expression of TNFSF11/RANKL and decreases expression of TNFRSF11B/OPG, thereby raising the RANKL/OPG ratio and stimulating osteoclast differentiation and bone resorption (PubMed:9797718, PubMed:11454517). Stimulates also [1-14C]-2-deoxy-D- glucose (2DG) transport and glycogen synthesis in osteoblastic cells (PubMed:21076856). In

distal renal tubule cells, stimulates active Ca(2+) reabsorption via the adenylyl cyclase-cAMP-protein kinase A (PKA) pathway leading to the phosphorylation and activation of the calcium selective cation channel TRPV5 (PubMed:19423690). Acting on PTH1R in proximal renal tubule cells, decreases reabsorption of filtered phosphate by reducing apical abundance of SLC34A1, through a mechanism involving PTH1R-activated PKC-mediated phosphorylation of the scaffold NHERF1, causing dissociation of the NHERF1-SLC34A1 complex and subsequent clathrin-mediated endocytosis and lysosomal degradation of the cotransporter (By similarity). Activates also transcription of CYP27B1 (25-hydroxyvitamin D3 1-alpha-hydroxylase) through a cAMP/PKA/SIK2-SIK3/CRTC2 axis, thereby increasing renal synthesis of the active vitamin D metabolite 1,25-dihydroxyvitamin D(3) (By similarity).

Cellular Location Secreted

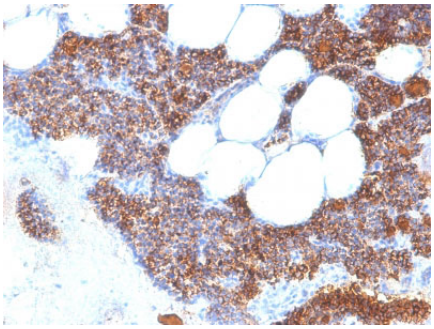
Background

Epitope of this MAb maps in the N-terminus of PTH, a hormone produced by the parathyroid gland that regulates the concentration of calcium and phosphorus in extracellular fluid. This hormone elevates blood Ca2+ levels by dissolving the salts in bone and preventing their renal excretion. It is produced in the parathyroid gland as an 84 amino acid single chain polypeptide. It can also be secreted as N-terminal truncated fragments or C-terminal fragments after intracellular degradation, as in case of hypercalcemia. Defects in this gene are a cause of familial isolated hypoparathyroidism (FIH); also called autosomal dominant hypoparathyroidism or autosomal dominant hypocalcemia. FIH is characterized by hypocalcemia and hyperphosphatemia due to inadequate secretion of parathyroid hormone. Symptoms are seizures, tetany and cramps. FIH exist both as autosomal dominant and recessive forms of hypoparathyroidism.

References

Watson, P.H. and Hanley, D.A. 1993. Parathyroid hormone: regulation of synthesis and secretion. Clin. Invest. Med. 16: 58-77. |

Images



Formalin-fixed, paraffin-embedded human Parathyroid stained with PTH Monoclonal Antibody (SPM604).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.