abcam

ab79539

# Anti-PTHLH antibody [3D1.1]

## Key facts

| | |
|---|---|
| **Isotype** | IgG1 |
| **Host species** | Mouse |
| **Storage buffer** | Preservative: 0.1% Sodium azide Constituents: PBS |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | Synthetic Peptide within Human PTHLH aa 100-200. The exact immunogen used to generate this antibody is proprietary information. Database link P12272 |
| **Clone number** | 3D1.1 |
| **Purification technique** | Affinity purification Protein G |
| **Specificity** | This clone reacts with the human Type I hPTH/PTHrP and it does not react with the Type II receptor. |
| **Concentration** | 1 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody. |

## ELISA

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## WB

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## IHC-P

### Expected

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

# Target data

See full target information PTHLH

**Function**

Neuroendocrine peptide which is a critical regulator of cellular and organ growth, development, migration, differentiation and survival and of epithelial calcium ion transport (PubMed:12538599, PubMed:35932760, PubMed:3616618). Acts by binding to its receptor, PTH1R, activating G protein-coupled receptor signaling (PubMed:19674967, PubMed:35932760). Regulates endochondral bone development and epithelial-mesenchymal interactions during the formation of the mammary glands and teeth (By similarity). Required for skeletal homeostasis (PubMed:12538599). Promotes mammary mesenchyme differentiation and bud outgrowth by modulating mesenchymal cell responsiveness to BMPs (PubMed:12538599). Up-regulates BMPR1A expression in the mammary mesenchyme and this increases the sensitivity of these cells to BMPs and allows them to respond to BMP4 in a paracrine and/or autocrine fashion (By similarity). BMP4 signaling in the mesenchyme, in turn, triggers epithelial outgrowth and augments MSX2 expression, which causes the mammary mesenchyme to inhibit

hair follicle formation within the nipple sheath (By similarity). Promotes colon cancer cell migration and invasion in an integrin alpha-6/beta-1-dependent manner through activation of Rac1 (PubMed:20637541). Osteostatin. Potent inhibitor of osteoclastic bone resorption.

## Storage

| | |
|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | Parathyroid hormone-like hormone (PTHLH) also known as PTHrP is a protein made by the PTHLH gene. It weighs around 17 kDa and its expression occurs in many tissues including the bone skin and developing structures during embryogenesis. PTHLH interacts with parathyroid hormone receptors offering actions similar to parathyroid hormone (PTH). This interaction helps to extend its role beyond classical calcium homeostasis to include other functions such as growth and developmental processes. |
| **Biological function summary** | PTHLH plays a role in cartilage development and endochondral bone formation. It functions as a significant regulator of cellular proliferation and differentiation especially in chondrocytes and osteoblasts. PTHLH can also act as part of multiprotein complexes that influence transcription and intracellular signaling. Furthermore it possesses diverse roles including smooth muscle contraction mammary gland development and cellular differentiation inhibition. |
| **Pathways** | Alongside related proteins like Indian Hedgehog (IHH) PTHLH resides in pathways critical for skeletal development and homeostasis. Notably the PTHLH/PTHR1 signaling pathway regulates chondrocyte maturation during bone growth. This pathway intersects with the Hedgehog pathway to form a regulatory loop essential for maintaining the growth plate's development and maturation. PTHLH also influences the Wnt signaling pathway associated with bone density and health. |
| **Associated diseases and disorders** | PTHLH has connections with certain cancers specifically breast cancer and hypercalcemia of malignancy. In cancerous tissues PTHLH can be overexpressed leading to increased osteoclastic bone resorption contributing to cancer-associated conditions. Additionally PTHLH overactivity links it to familial benign |

hypercalcemia through its interactions with PTH and its receptors. Understanding these associations could offer therapeutic targets for treatment.

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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