# Anti-MMP13 antibody ab39012

**Product name**: Anti-MMP13 antibody

**Description**: Rabbit polyclonal to MMP13

**Host species**: Rabbit

**Specificity**: ab39012 recognizes the latent proenzyme, at 60 Kd, as well as the active form at 48 Kd, and intermediate activation forms. It does not cross react with the other MMP family members. ab39012 recognizes the Hinge region of MMP13.

**Tested applications**: Suitable for: IHC-P, WB, ICC/IF, Sandwich ELISA, Flow Cyt, IHC-Fr

**Species reactivity**: Reacts with: Mouse, Rat, Dog, Human

**Immunogen**: Synthetic peptide corresponding to Human MMP13 (Hinge). Database link: P45452 (Peptide available as ab238653, ab44853)

**Positive control**: Caco 2 whole cell lysate (ab3950) can be used as a positive control in WB. Cell media from human chondrosarcoma (IL1 beta treated). Mouse endochondral precursor (rib cartilage) tissue. Human colon carcinoma tissue.

**Form**: Liquid

**Storage instructions**: Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.

**Storage buffer**: Preservative: 0.05% Sodium azide
Constituent: 50% Glycerol

**Purity**: Immunogen affinity purified

**Purification notes**: The antibody has been peptide-affinity purified.

**Clonality**: Polyclonal

**Isotype**: IgG

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Our Abpromise guarantee covers the use of **ab39012** in the following tested applications.
Function
Degrades collagen type I. Does not act on gelatin or casein. Could have a role in tumoral process.

Tissue specificity
Seems to be specific to breast carcinomas.

Involvement in disease
Defects in MMP13 are the cause of spondyloepimetaphyseal dysplasia Missouri type (SEMD-MO) [MIM:602111]. A bone disease characterized by moderate to severe metaphyseal changes, mild epiphyseal involvement, rhizomelic shortening of the lower limbs with bowing of the femora and/or tibiae, coxa vara, genu varum and pear-shaped vertebrae in childhood. Epimetaphyseal changes improve with age.

Defects in MMP13 are the cause of metaphyseal anadysplasia type 1 (MANDP1) [MIM:602111]. Metaphyseal anadysplasia consists of an abnormal bone development characterized by severe skeletal changes that, in contrast with the progressive course of most other skeletal dysplasias, resolve spontaneously with age. Clinical characteristics are evident from the first months of life and include slight shortness of stature and a mild varus deformity of the legs. Patients attain a normal stature in adolescence and show improvement or complete resolution of varus deformity of the legs and rhizomelic micromelia.

Sequence similarities
Belongs to the peptidase M10A family.
Contains 4 hemopexin-like domains.

Domain
The conserved cysteine present in the cysteine-switch motif binds the catalytic zinc ion, thus inhibiting the enzyme. The dissociation of the cysteine from the zinc ion upon the activation-peptide release activates the enzyme.

Cellular localization
Secreted > extracellular space > extracellular matrix.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tr>
<td>IHC-P</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>WB</td>
<td>★★★★★</td>
<td>1/3000 - 1/6000. Predicted molecular weight: 54 kDa. 1/3000, when using colorimetric substrates such as BCIP/NBT - 1/6000, when using chemiluminescent substrates. Dilution optimised using Chromogenic detection. When used against the reduced protein identifies a band at 60 Kd. Note: The low endogenous protein levels may require concentration of samples by ultrafiltration or ammonium sulfate precipitation prior to Western blotting.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td>★★★★★</td>
<td>Use at an assay dependent concentration. PubMed: 24056368</td>
</tr>
<tr>
<td>Sandwich</td>
<td></td>
<td>Use a concentration of 0.5 µg/ml. For sandwich ELISA, use this antibody as Detection at 0.5µg/ml with ab77949 as Capture.</td>
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<tr>
<td>ELISA</td>
<td></td>
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<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use at an assay dependent concentration. ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td>★★★★★</td>
<td>Use at an assay dependent concentration.</td>
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Target

<table>
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<tr>
<th>Function</th>
<th>Tissue specificity</th>
<th>Involvement in disease</th>
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Images
All lanes: Anti-MMP13 antibody (ab39012) at 1/3000 dilution

Lane 1: cell media from human chondrosarcoma (untreated).
Lane 2: cell media from human chondrosarcoma (IL1 beta treated).

Predicted band size: 54 kDa
Observed band size: 60 kDa

why is the actual band size different from the predicted?

The loading amount is 15 ul/lane, and the condrosarcoma media was concentrated 40x.

Immunohistochemical analysis of formalin-fixed, paraffin-embedded Human colon carcinoma tissue (ab3950), staining MMP13 with ab39012.

Tissue was fixed with formaldehyde and blocked with 1% serum for 1 hour at 24°C; antigen retrieval was by heat mediation in a citrate buffer (pH 6). Samples were incubated with primary antibody (1/100 in diluent) for 12 hours at 4°C. A biotinylated goat anti-rabbit polyclonal IgG (1/200) was used as the secondary antibody.

ab39012 staining MMP13 in Mouse endochondral precursor (rib cartilage) tissue by Immunohistochemistry (Frozen sections). The sections were PFA-fixed prior to blocking with 10% serum for 1 hour at 19°C. The primary antibody was diluted 1/200 and incubated with the sample for 16 hours at 4°C. A donkey anti-rabbit Alexa Fluor® 647 polyclonal (ab150075) was used as the secondary antibody, diluted 1/200. DAPI was used for the blue counterstain.
ab39012 staining MMP13 in mouse cartilage and meniscus tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with 4% buffered formalin and blocked with 10% serum for 1 hour at 27°C. Samples were incubated with primary antibody (1/400 in TBST) for 15 hours at 4°C. A streptavidin-conjugated goat anti-rabbit IgG polyclonal (biotinylated, 1/200) was used as the secondary antibody.

Standard curve for MMP13; dilution range 1pg/ml to 1µg/ml using Capture Antibody Mouse monoclonal [181-15A12] to MMP13 (ab77949) at 1µg/ml and Detector Antibody Rabbit polyclonal to MMP13 - Hinge region (ab39012) at 0.5µg/ml.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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