

ARG82628 Human MMP2 Assay Kit

Package: 96 wells
Store at: -20°C

Summary

Product Description	ARG82628 Human MMP2 Assay Kit is a detection kit for the quantification of Human MMP2 in serum, plasma, cell culture supernatants, urine and tissue homogenates.
Tested Reactivity	Hu
Tested Application	FuncSt
Specificity	Measures endogenous active MMP2 (naturally occurring) or total active MMP2 (following activation with APMA).
Target Name	MMP2
Conjugation Note	Read at 405 nm.
Sensitivity	40 pg/ml for 2 hours incubation 20 pg/ml for 6 hours incubation 4 pg/ml for overnight incubation
Detection Range	16 - 16000 pg/ml
Sample Type	Serum, plasma, cell culture supernatants, urine and tissue homogenates.
Sample Volume	100 µl
Alternate Names	CLG4A; MMP-2; TBE-1; MONA; CLG4; EC 3.4.24.24; Gelatinase A; Matrix metalloproteinase-2; MMP-II; 72 kDa gelatinase; 72 kDa type IV collagenase

Application Instructions

Assay Time	Overnight
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Properties

Form	96 well
Storage instruction	Store the kit at -20°C. Keep microplate wells sealed in a dry bag with desiccants. Do not expose test reagents to heat, sun or strong light during storage and usage. Please refer to the product user manual for detail temperatures of the components.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	MMP2
Gene Full Name	matrix metalloproteinase 2
Background	This gene is a member of the matrix metalloproteinase (MMP) gene family, that are zinc-dependent enzymes capable of cleaving components of the extracellular matrix and molecules involved in signal transduction. The protein encoded by this gene is a gelatinase A, type IV collagenase, that contains three fibronectin type II repeats in its catalytic site that allow binding of denatured type IV and V collagen and elastin. Unlike most MMP family members, activation of this protein can occur on the cell

membrane. This enzyme can be activated extracellularly by proteases, or, intracellularly by its S-glutathiolation with no requirement for proteolytical removal of the pro-domain. This protein is thought to be involved in multiple pathways including roles in the nervous system, endometrial menstrual breakdown, regulation of vascularization, and metastasis. Mutations in this gene have been associated with Winchester syndrome and Nodulosis-Arthropathy-Osteolysis (NAO) syndrome. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Oct 2014]

Function

Ubiquitous metalloproteinase that is involved in diverse functions such as remodeling of the vasculature, angiogenesis, tissue repair, tumor invasion, inflammation, and atherosclerotic plaque rupture. As well as degrading extracellular matrix proteins, can also act on several nonmatrix proteins such as big endothelial 1 and beta-type CGRP promoting vasoconstriction. Also cleaves KISS at a Gly-|-Leu bond. Appears to have a role in myocardial cell death pathways. Contributes to myocardial oxidative stress by regulating the activity of GSK3beta. Cleaves GSK3beta in vitro. Involved in the formation of the fibrovascular tissues in association with MMP14.

PEX, the C-terminal non-catalytic fragment of MMP2, possesses anti-angiogenic and anti-tumor properties and inhibits cell migration and cell adhesion to FGF2 and vitronectin. Ligand for integrin/beta3 on the surface of blood vessels.

Isoform 2: Mediates the proteolysis of CHUK/IKKA and initiates a primary innate immune response by inducing mitochondrial-nuclear stress signaling with activation of the pro-inflammatory NF-kappaB, NFAT and IRF transcriptional pathways. [UniProt]

PTM

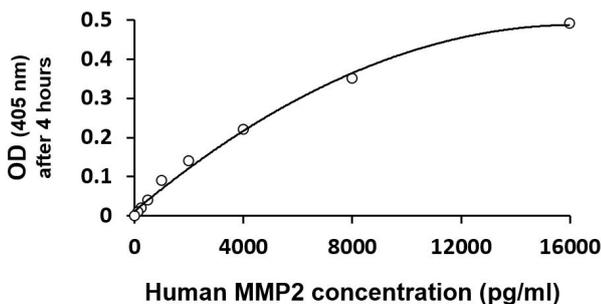
Phosphorylation on multiple sites modulates enzymatic activity. Phosphorylated by PKC in vitro.

The propeptide is processed by MMP14 (MT-MMP1) and MMP16 (MT-MMP3). Autocatalytic cleavage in the C-terminal produces the anti-angiogenic peptide, PEX. This processing appears to be facilitated by binding integrin/beta3. [UniProt]

Cellular Localization

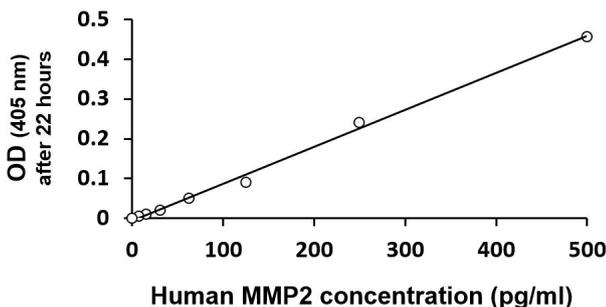
Isoform 1: Secreted, extracellular space, extracellular matrix. Membrane. Nucleus. Note=Colocalizes with integrin alphaV/beta3 at the membrane surface in angiogenic blood vessels and melanomas. Found in mitochondria, along microfibrils, and in nuclei of cardiomyocytes. Isoform 2: Cytoplasm. Mitochondrion. [UniProt]

Images



ARG82628 Human MMP2 Assay Kit typical data demonstration image

ARG82628 Human MMP2 Assay Kit results of a typical data with optical density reading at 405 nm (after 4 hours incubation).



ARG82628 Human MMP2 Assay Kit typical data demonstration image

ARG82628 Human MMP2 Assay Kit results of a typical data with optical density reading at 405 nm (after 22 hours incubation).