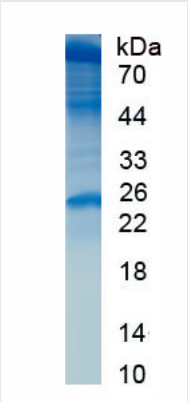
Myeloperoxidase (MPO) Active Protein

PRODUCT OVERVIEW

Product Name	Myeloperoxidase (MPO), Active Protein
Full Product Name	Active Myeloperoxidase (MPO)
Product Gene Name	MPO active protein
Product Synonym Names	Myeloperoxidase4
Sequence	Ala49~Ser7 45
Host	E Coli
Form/Format	Freeze-dried powder; PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
Purity/Purification	Greater than 80% by SDS-PAGE
Preparation and Storage	Store at 2-8 degree C for one month, -80 degree C for 12 months
Molecular Weight	83,869 Da
Chromosome Location	Chromosome: 17; NC_000017.10 (56347217..56358296, complement). Location: 17q23.1
OMIM	254600
3D Structure	ModBase 3D Structure for P05164
Supply Chain Verification	Manufactured in a lab with traceable raw materials. Bulk orders can typically be prepared to the customer's specifications, please inquire.
Active Protein Note	Protein activity can be an ambiguous term. Please refer to the data sheet or inquire with Technical Support to determine the definition of activity for this product.
Species	Human
Expression System	Prokaryotic expression
Tag	N-terminal His Tag
Endotoxin Level	<1.0EU per 1ug (determined by the LAL method)
Isoelectric Point	9
Research Area	Enzyme & Kinase, Infection immunity, Cardiovascular biology, Hepatology
Product Categories/Family for MPO active protein	Active proteins
ISO Certification	Manufactured in an ISO 9001:2015 and ISO 13485:2016 Certified Laboratory.
Applications Tested/Suitable for MPO active protein	Cell culture, Activity Assays
Related Product Information for MPO active protein	MBS2162267 is an active protein targeting MPO. Also known as Active Myeloperoxidase (MPO). Host: E Coli.
Other Notes	Small volumes of MPO active protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.



SDS-PAGE of MPO active protein
Figure. SDS-PAGE

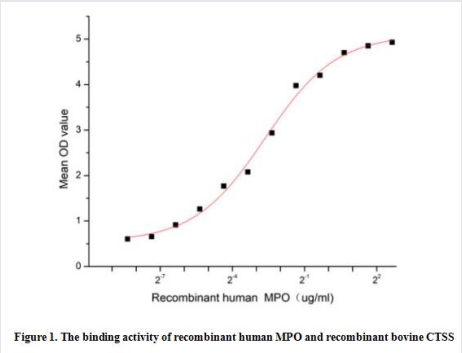


Figure 1. The binding activity of recombinant human MPO and recombinant bovine CTSS

Activity of MPO active protein
Myeloperoxidase (MPO), a member of the XPO subfamily of peroxidases, is a 150 kDa heme protein produced mostly from polymorphonuclear neutrophils and monocytes. MPO is a part of the host defense system of polymorphonuclear leukocytes. It is responsible for microbicidal activity against a wide range of organisms. In the stimulated PMN, MPO catalyzes the production of hypohalous acids, primarily hypochlorous acid in physiologic situations, and other toxic intermediates that greatly enhance PMN microbicidal activity. Cathepsin S (CTSS) is one of targets of MPO, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human MPO and recombinant bovine CTSS. Briefly, biotin-linked MPO were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 ul were then transferred to CTSS-coated microtiter wells and incubated for 1h at 37 degree C. Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 degree C. Finally, add 50 ul stop solution to the wells and read at 450 nm immediately. The binding activity of recombinant human MPO and recombinant bovine CTSS was shown in Figure 1, the EC50 for this effect is 0.16 ug/mL.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MPO. It may not necessarily be applicable to this product.

NCBI GI #	188658
NCBI GeneID	4353
NCBI Accession #	AAA59863.1
UniProt Primary Accession #	P05164
UniProt Secondary Accession #	Q14862; Q4PJH5; Q9UCL7; A1L4B8
UniProt Related Accession #	P05164
NCBI Official Full Name	myeloperoxidase
NCBI Official Synonym Full Names	myeloperoxidase
NCBI Official Symbol	MPO
UniProt Protein Name	Myeloperoxidase
Protein Family	Myeloperoxidase
UniProt Gene Name	MPO
UniProt Synonym Gene Names	MPO
UniProt Entry Name	PERM_HUMAN
NCBI Protein Information	myeloperoxidase
NCBI Summary for MPO	Myeloperoxidase (MPO) is a heme protein synthesized during myeloid differentiation that constitutes the major component of neutrophil azurophilic granules. Produced as a single chain precursor, myeloperoxidase is subsequently cleaved into a light and heavy chain. The mature myeloperoxidase is a tetramer composed of 2 light chains and 2 heavy chains. This enzyme produces hypohalous acids central to the microbicidal activity of netrophils. [provided by RefSeq, Jul 2008]

UniProt Comments for MPO	MPO: Part of the host defense system of polymorphonuclear leukocytes. It is responsible for microbicidal activity against a wide range of organisms. In the stimulated PMN, MPO catalyzes the production of hypohalous acids, primarily hypochlorous acid in physiologic situations, and other toxic intermediates that greatly enhance PMN microbicidal activity. Homodimer; disulfide-linked. Each monomer consists of a light and a heavy chain. Belongs to the peroxidase family. XPO subfamily. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Oxidoreductase; EC 1.11.2.2 Chromosomal Location of Human Ortholog: 17q23.1 Cellular Component: extracellular space; azurophil granule; mitochondrion; lysosome; nucleus; secretory granule Molecular Function: heparin binding; peroxidase activity; metal ion binding; heme binding; chromatin binding Biological Process: respiratory burst during defense response; response to food; removal of superoxide radicals; response to mechanical stimulus; hydrogen peroxide catabolic process; response to lipopolysaccharide; response to yeast; defense response; response to oxidative stress; defense response to fungus; negative regulation of apoptosis; aging Disease: Myeloperoxidase Deficiency; Alzheimer Disease
Research Articles on MPO	**1.** the MPO G-463A variant genotypes may be associated with decreased risk of CAD. However, given the limited number of studies and the potential biases, the influence of this polymorphism on CAD risk needs further investigation.
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