

Cytochrome P450 BM-3 Protein, Bacillus megaterium, Recombinant (His & Myc)

General Information

Synonyms:	Cytochrome P450BM-3;cyp102;Flavocytochrome P450 BM3;Bifunctional cytochrome P450/NADPH--P450 reductase;Cytochrome P450(BM-3);Fatty acid monooxygenase;cyp102A1
Protein Construction:	2-472 aa
Species:	Bacillus megaterium
Expression Host:	E. coli
Accession:	P14779
Molecular Weight:	61.2 kDa (predicted)
AA Sequence:	TIKEMPQPKTFGELKNLPLLNTDKPVQALMKIADELGEIFKFEAPGRVTRYLSSQRLIKEACDESRFDKNLSQAL KFVRDFAGDGLFTSWTHEKNWKKAHNILLPSFSQQAMKGYHAMMVDIAVQLVQKWERLNADEHIEVPEDM TRLTLDTIGLCGFNYRFNSFYRDQPHPFITSMVRALDEAMNKLQRANPDDPAYDENKRQFQEDIKVMNDLVD KIIADRKASGEQSDDLTHMLNGKDPETGEPLDDENIRYQIITFLIAGHETTSGLLSFALYFLVKNPHVLQKAAE EAARVLVDPVPSYKQVKQLKYVGMVLNEALRLWPTAPAFSLYAKEDTVLGGEYPLEKGDMLVLIPLHRDK TIWGDDVEEFRPERFENPSAIPQHAFKPFNGQRACIGQQFALHEATLVLGMMMLKHDFDFEDHTNYELDIKETL TLKPEGFVVKAKSKKIPLGGIPSPSTEQSAKKVR

QC Testing

Biological Activity:	Activity has not been tested. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose, pH 8.0.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100 μg/mL. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Functions as a fatty acid monooxygenase. Catalyzes hydroxylation of fatty acids at omega-1, omega-2 and omega-3 positions. Shows activity toward medium and long-chain fatty acids, with optimum chain lengths of 12, 14 and 16 carbons (lauric, myristic, and palmitic acids). Able to metabolize some of these primary metabolites to secondary and tertiary products. Marginal activity towards short chain lengths of 8-10 carbons. Hydroxylates highly branched fatty acids, which play an essential role in membrane fluidity regulation. Also displays a NADPH-dependent reductase activity in the C-terminal domain, which allows electron transfer from NADPH to the heme iron of the cytochrome P450 N-terminal domain. Involved in inactivation of quorum sensing signals of other competing bacteria by oxidizing efficiently acyl homoserine lactones (AHLs), molecules involved in quorum sensing signaling pathways, and their lactonolysis products acyl homoserines (AHs).

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