# Recombinant CBR4 protein (His tag)

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| **Catalog Number** | 545431 |
| **Synonyms** | 3-ketoacyl-[acyl-carrier-protein] reductase beta subunit; KAR beta subunit; Carbonyl reductase family member 4; CBR4; Quinone reductase CBR4; Short chain dehydrogenase/reductase family 45C member 1 |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q8N4T8 |
| **Molecular Weight** | Predictes a molecular mass of 26.96 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 27 kDa band. |

## Product Information

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| **Sequence Region** | 1-237 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >90%, by SDS-PAGE with Coomassie Brilliant Blue staining. |
| **Endotoxin** | Not tested. |
| **Activity** | Not tested. |
| **Stability** | Samples are stable for up to twelve months from date of receipt at -70℃ |
| **Protein Construction** | DNA encoding 1-237 aa (Q8N4T8) were fused with 6His tag. |

## Storage & Handling

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| **Reconstitution** | Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. |
| **Storage** | Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles. |
| **Shipping** | In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | Recombinant Human 3-oxoacyl-[acyl-carrier-protein] reductase (CBR4) fragment (amino acids 1-237) is a high-purity protein designed for structural and biochemical studies. This fragment represents a stable, soluble unit of the enzyme, ideal for investigating its roles in mitochondrial fatty acid synthesis and quinone detoxification.<br>The full-length protein, encoded by the CBR4 gene, is a component of the heterotetrameric KAR complex within the mitochondrial matrix, where it functions as the beta-subunit responsible for 3-ketoacyl-[acyl-carrier-protein] reductase activity. It catalyzes the NADPH-dependent reduction of 3-oxoacyl-[ACP] to (3R)-hydroxyacyl-[ACP], a critical step in mitochondrial fatty acid biosynthesis with no chain length specificity. Additionally, the protein exhibits NADPH-dependent quinone reductase activity, reducing compounds like 9,10-phenanthrenequinone and 1,4-benzoquinone, suggesting a protective role against quinone-induced cytotoxicity. These functions highlight its importance in cellular metabolism and oxidative stress response. |