# Recombinant FA2H protein (His tag)

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| **Catalog Number** | 542987 |
| **Synonyms** | Fatty acid alpha-hydroxylase; Fatty acid hydroxylase domain-containing protein 1 |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q7L5A8 |
| **Molecular Weight** | Predictes a molecular mass of 11.27 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 11 kDa band. |

## Product Information

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| **Sequence Region** | 1-87 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >86%, 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 1-87 aa (Q7L5A8) 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 Fatty Acid 2-Hydroxylase (FA2H) Fragment (residues 1-87) from Homo sapiens, encompassing the complete cytochrome b5 heme-binding domain (residues 8-86). This fragment serves as an essential tool for investigating the structural and functional roles of this domain in fatty acid hydroxylation and sphingolipid synthesis.<br>Fatty acid 2-hydroxylase (FA2H) is a key enzyme in human metabolism, catalyzing the stereospecific hydroxylation of free fatty acids at the C-2 position to produce (R)-2-hydroxy fatty acids. These hydroxylated fatty acids are critical building blocks for sphingolipids and glycosphingolipids, which are abundant in neural tissues and the epidermis. FA2H plays a vital role in the synthesis of galactosphingolipids necessary for myelin sheath formation, contributes to the epidermal lamellar bodies essential for skin barrier function, and regulates hair follicle homeostasis through the production of glycosphingolipids and wax diesters in sebaceous glands. Additionally, it influences plasma membrane raft dynamics and the trafficking of associated proteins. The enzyme is localized to the endoplasmic reticulum and microsome membranes as a multi-pass membrane protein, highlighting its integral role in lipid metabolism and cellular membrane organization. |