# Recombinant FXR1 protein (His tag)

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| **Catalog Number** | 537802 |
| **Synonyms** | FMR1 autosomal homolog 1; hFXR1p |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | P51114 |
| **Molecular Weight** | Predictes a molecular mass of 44.73 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 49 kDa band. |

## Product Information

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| **Sequence Region** | 2-379 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >88%, 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 2-379 aa (P51114) 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 FXR1 Fragment (2-379) is a high-purity protein product encompassing the key functional domains (Agenet-like 1, Agenet-like 2, KH 1, and KH 2) of the RNA-binding protein FXR1. This fragment serves as an essential tool for investigating mRNA regulation, phase separation mechanisms, and translational control in cellular processes such as neurogenesis, muscle development, and spermatogenesis.<br>FXR1 (FMR1 autosomal homolog 1) is a critical mRNA-binding protein in humans that regulates mRNA translation and stability, playing vital roles in neurogenesis, muscle development, and spermatogenesis. It specifically binds AU-rich elements (AREs) in target mRNAs and undergoes liquid-liquid phase separation to form cytoplasmic ribonucleoprotein granules, which concentrate mRNAs and associated regulatory factors. FXR1 activates translation of stored mRNAs during late spermatogenesis, promotes MYC translation by recruiting the eIF4F complex, and negatively regulates inflammation by destabilizing pro-inflammatory transcripts like TNF. It also inhibits AMPA receptor synthesis in hippocampal neurons and supports muscle tissue development through phase separation. Subcellularly, FXR1 localizes to cytoplasmic ribonucleoprotein granules, stress granules, dendrites, axons, and the nuclear envelope, where it prevents cytoplasmic aggregation of nucleoporins. Its involvement in signaling networks, such as facilitating actomyosin reorganization, underscores its broad functional significance in cellular homeostasis and development. |