# Recombinant CUFF protein (His tag)

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| **Catalog Number** | 532340 |
| **Species** | Drosophila melanogaster |
| **Expression System** | E. coli |
| **Accession** | Q9V629 |
| **Gene ID** | 36269 |
| **Molecular Weight** | Predictes a molecular mass of 46.49 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 46 kDa band. |

## Product Information

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| **Sequence Region** | 1-384 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >89%, 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 1-384 aa (Q9V629) 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 Drosophila melanogaster Protein Cutoff (cuff) fragment (residues 1-384) is a high-purity, stable protein preparation ideal for studying piRNA biogenesis mechanisms. This soluble fragment maintains structural integrity for biochemical assays, structural studies, and functional investigations of the Rhino-Deadlock-Cutoff complex.<br>Protein Cutoff is a key component in the piRNA pathway within Drosophila melanogaster germline tissues, where it functions as part of the Rhino-Deadlock-Cutoff (RDC) complex. This complex specifically stimulates piRNA biogenesis from dual-strand piRNA clusters by promoting transcription of long piRNA precursors and preventing termination at canonical poly(A) sites. Cutoff suppresses cleavage at poly(A) sites by blocking recruitment of the cleavage and polyadenylation specificity factor complex, facilitating transcriptional read-through by RNA polymerase II. The protein localizes to both cytoplasm and nucleus, specifically accumulating at chromosomal positions enriched in H3K9me3 histone modifications and forming nuclear foci corresponding to dual-strand piRNA clusters. Although catalytically inactive, it stabilizes uncapped piRNA precursors by potentially sequestering or blocking exonuclease activity. The RDC complex components associate with these nuclear foci and are required for their formation, playing additional roles in splicing suppression and potentially siRNA biogenesis from dual-strand clusters. |