

MCR-1 protein, E.coli (364a.a, His-SUMO)

Cat. No.:	HY-P71578
Synonyms:	mcr1; mcr-1; APZ14_31440; Probable phosphatidylethanolamine transferase Mcr-1; EC 2.7.-.-; Polymyxin resistance protein MCR-1
Species:	E.coli
Source:	E. coli
Accession:	A0A0R6L508 (H178-R541)
Gene ID:	55632978
Molecular Weight:	Approximately 56.7 kDa

PROPERTIES

AA Sequence	<pre> HYASFFRVHK PLRSYVNPIM PIYSVGKLAS IEYKKASAPK DTIYHAKDAV QATKPDMRKP RLVVFFVGET ARADHVSFNG YERDTFPQLA KIDGVTNFSN VTSCGTSTAY SVPCMFSYLG ADEYDVDATAK YQENVLDTL D RLGVSILWRD NNSDSKGVMD KLPKAQFADY KSATNNAICN TNPYNECRDV GMLVGLDDFV AANNGKDMLI MLHQMGNHGP AYFKRYDEKF AKFTPVCEGN ELAKCEHQSL INAYDNALLA TDDFIAQSIQ WLQTHSNAYD VSMLYVSDHG ESLGENGVYL HGM PNAFAPK EQRSVPAFFW TDKQTGITPM ATDTVLTHDA IPTLLKLF D VTADKVKDRT AFIR </pre>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against solution in Tris-based buffer, 50% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The MCR-1 protein is likely responsible for catalyzing the addition of a phosphoethanolamine moiety to lipid A, a
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modification associated with polymyxin resistance. This modification plays a crucial role in conferring resistance to polymyxin-type antibiotics, as evidenced by increased minimal inhibitory concentrations (MIC) of colistin and polymyxin B in *E. coli* expressing MCR-1. The pHNSHP45 plasmid, carrying the *mcr-1* gene, exhibits efficient transferability to other *E. coli* strains and significantly elevates polymyxin MIC. Notably, this resistance may not necessitate selective pressure for maintenance within the cell. When introduced into other bacterial species like *K. pneumoniae* or *P. aeruginosa*, the plasmid similarly enhances polymyxin MIC. In a murine thigh infection study using an *mcr-1*-encoding plasmid from a human patient, the plasmid provides in vivo protection against colistin. These findings underscore the crucial role of MCR-1 in mediating resistance to polymyxin antibiotics in various bacterial strains.

Caution: Product has not been fully validated for medical applications. For research use only.

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