

MCR-1 Protein, E.coli (Cell-Free, His-SUMO)

Cat. No.:	HY-P701313
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 Cell-free
Accession:	A0A0R6L508 (M1-R541)
Gene ID:	55632978
Molecular Weight:	Monomer: 80 kDa Dimer: 160 kDa. It is speculated that the protein forms a dimeric structure.

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder
Formulation	Lyophilized from PBS, 0.05% Bij-78, 6% Trehalose, pH 7.4.
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 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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