

PhoP Protein, E.coli (P.pastoris, Myc, His)

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| Cat. No.: | HY-P71800 |
| Synonyms: | phoP; b1130; JW1116; Transcriptional regulatory protein PhoP |
| Species: | E.coli |
| Source: | P. pastoris |
| Accession: | P23836 (1M-223R) |
| Gene ID: | 945697 |
| Molecular Weight: | Approximately 29.0 kDa |

PROPERTIES

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| AA Sequence | <pre> MRVLVVEDNA LLRHHLKVQI QDAGHQVDDA EDAKEADYYL NEHIPDIAIV DLGLPDEDGL SLIRRWRSND VSLPILVLT A RESWQDKVEV LSAGADDYVT KPFHIEEVMA RMQALMRRNS GLASQVISLP PFQVDLSRRE LSINDEVIKL TAFEYTIMET LIRNNGKVV S KDSLMLQLYP DAELRESHTI DVLMGRLRKK IQAQYPQEV I TTVRGQGYLF ELR </pre> |
| 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

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| Background | <p>PhoP Protein, a crucial component of the two-component regulatory system PhoP/PhoQ, plays a pivotal role in adapting to low Mg⁽²⁺⁾ environments and governing the expression of acid resistance genes. In conditions of low periplasmic Mg⁽²⁺⁾, PhoQ phosphorylates PhoP, leading to the activation of PhoP-activated genes (PAG) and repression of PhoP-repressed genes (PRG). Conversely, high periplasmic Mg⁽²⁺⁾ triggers the dephosphorylation of phospho-PhoP by PhoQ, resulting in the repression of PAG and potential expression of certain PRG. PhoP facilitates magnesium influx to the cytosol through the activation of MgtA and promotes the expression of various genes, including <i>rstA/rstB</i>, <i>hemL</i>, <i>mgrB</i>, <i>nagA</i>, <i>slyB</i>, <i>vboR</i>, and <i>yrbL</i>. Additionally, the regulatory loop involves feedback inhibition by MgrB, which binds to PhoQ, influencing its activity</p> |
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and downstream effector PhoP. The redox sensitivity of PhoP-regulated transcription is evident in a more reducing periplasmic environment, influenced by factors such as the deletion of dsbA/dsbB or treatment with dithiothreitol, and MgrB operates in the pathway between DsbA/DsbB and PhoP/PhoQ.

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

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