

## DCD Protein, Human (P.pastoris, His)

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| <b>Cat. No.:</b>         | HY-P71729   |
| <b>Synonyms:</b>         | AIDD ; DCD 1; dcd; DCD-1; DCD_HUMAN; Dermcidin; DSEP; HCAP; PIF; Preproteolysin                             |
| <b>Species:</b>          | Human   |
| <b>Source:</b>           | P. pastoris   |
| <b>Accession:</b>        | P81605 (Y20-L110)   |
| <b>Gene ID:</b>          | 117159  |
| <b>Molecular Weight:</b> | Approximately 17 kDa. The reducing (R) protein migrates as 17 kDa in SDS-PAGE maybe due to relative charge. |

### PROPERTIES

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| <b>AA Sequence</b>             | Y D P E A A S A P G      S G N P C H E A S A      A Q K E N A G E D P      G L A R Q A P K P R<br>K Q R S S L L E K G      L D G A K K A V G G      L G K L G K D A V E      D L E S V G K G A V<br>H D V K D V L D S V      L |
| <b>Biological Activity</b>     | The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.   |
| <b>Appearance</b>              | Lyophilized powder.  |
| <b>Formulation</b>             | Lyophilized from a 0.2 µm sterile filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0.   |
| <b>Endotoxin Level</b>         | <1 EU/µg, determined by LAL method.  |
| <b>Reconstitution</b>          | It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.  |
| <b>Storage &amp; Stability</b> | 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.                     |
| <b>Shipping</b>                | Room temperature in continental US; may vary elsewhere.  |

### DESCRIPTION

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| <b>Background</b> | DCD protein, found in sweat, demonstrates antimicrobial activity during the early stages of bacterial colonization. The secreted peptide forms homohexameric complexes capable of associating with and inserting into pathogen membranes. Upon insertion into bacterial membranes, DCD protein creates anion channels, potentially altering the transmembrane potential crucial for bacterial survival. It exhibits high efficacy against various pathogens, including E. coli, E. faecalis, S. aureus, and C. albicans. Operating optimally under conditions resembling those in sweat, DCD protein also displays |
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proteolytic activity, with a preference for cleaving on the C-terminal side of Arg and, to a lesser extent, Lys residues. Additionally, DCD protein promotes neuron survival and exhibits phosphatase activity, suggesting a multifaceted role in host defense mechanisms. Furthermore, it may have the ability to bind to IgG.

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

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