

Product Information

YOP Protein Tyrosine Phosphatase Truncated, AA 163-468

Product Number **Y 4252**
Storage temperature $-20\text{ }^{\circ}\text{C}$

Product Description

Yop Protein Tyrosine Phosphatase is a member of a group of effector proteins that are translocated into host cells by the pathogenic bacterial species *Yersinia*. Yops are *Yersinia* outer proteins and include several enzymatic activities. Yop Protein Tyrosine Phosphatase (YopH, Yop51) is a 51 kDa protein with a C-terminal protein tyrosine phosphatase (PTPase) domain and a central proline rich region.¹ The protein has high homology with the eukaryotic PTPase family.

YOP protein tyrosine phosphatase, truncated, AA 163-468 (Yop51* δ 162), is the C-terminal PTPase domain, amino acids 163-468, of Yop51. It is a 33 kDa recombinant *Yersinia pseudotuberculosis* protein overexpressed in *E. coli*. The related *Yersinia pestis* is the causative agent of Black Death or the plague.

The family of PTPases is composed of receptor-like and non-receptor proteins that act alone or with protein-tyrosine kinases to control levels of cellular phosphorylation. PTPases are specific for hydrolysing the phosphate group from the tyrosine of proteins. *Yersinia* PTPases are the most active PTPases known.² Yop51 PTPase activity can specifically remove the phosphate from 60 and 120 kDa proteins.³

Product Profile

Yop51* δ 162 is supplied as a solution in 25 mM HEPES, pH 7.2, 250 mM NaCl, 5 mM DTT, 2.5 mM EDTA, 50% glycerol.

Unit definition: one unit will hydrolyze
1 nM p-nitrophenyl phosphate in 1 min. at $30\text{ }^{\circ}\text{C}$.

Storage/Stability

Store product at $-20\text{ }^{\circ}\text{C}$. Stable for one year at $-20\text{ }^{\circ}\text{C}$ from date of shipment if stored as recommended.

Precautions and Disclaimer

Yop51* δ 162 is for laboratory use only; not for drug, household or other uses. Warning statements are included on the label where applicable. Avoid contact and inhalation of the product.

References

1. Black, D. S., and Bliska, J. B., Identification of p130^{Cas} as a substrate of *Yersinia* YopH (Yop51), a bacterial protein tyrosine phosphatase that translocates into mammalian cells and targets focal adhesions. *EMBO J.*, **16**, 2730-2744 (1997).
2. Zhang, Z-Y., et al., Expression, purification, and physicochemical characterization of a recombinant *Yersinia* protein tyrosine phosphatase. *J. Biol. Chem.*, **267**, 23759-23766 (1992).
3. Bliska, J. B., et al., Tyrosine phosphate hydrolysis of host proteins by an essential *Yersinia* virulence determinant. *Proc. Natl. Acad. Sci. U.S.A.*, **88**, 1187-1191 (1991).
4. Guan, K. L., and Dixon, J. E., Protein tyrosine phosphatase activity of an essential virulence determinant in *Yersinia*. *Science*. **249**, 553-556 (1990).
5. Zhang, Z-Y., et al., Substrate specificity of the protein tyrosine phosphatases. *Proc. Natl. Acad. Sci. U S A*. **90**, 4446-4450 (1993).

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