

## VHR

VH1-related protein tyrosine phosphatase,  
human, recombinant, *E. coli*

Cat. No.	Amount
PR-350	20 µg

For *in vitro* use only  
Quality guaranteed for 12 months  
Store at -80°C

### Avoid freeze / thaw cycles

### Form

Liquid. Supplied as a 1 mg/ml solution in 50 mM Hepes, pH 7.4, 40 mM NaCl, 1 mM EDTA and 1 mM DTT.

### Specific activity

1 nmol of Cdc25A will hydrolyze 180 nmol of pNPP per minute at 37°C at pH 6.5.

Assay buffer  
25 mM MOPS, pH 6.5, 5 mM EDTA.

### Purity

≥ 90% by SDS-PAGE.

### Description

The mammalian dual-specificity protein-tyrosine phosphatase VHR (for VH1-related) has been identified as a novel regulator of extracellular regulated kinases (ERKs). Vaccinia Virus VH1-related Phosphatase (VHR), also known as Dual-Specificity Phosphatase 3 (DUSP3), removes phosphate groups from tyrosine, serine, and threonine residues. It belongs to a family of phosphatases that selectively dephosphorylate MAP kinases. VHR has been shown to act as a phosphatase for several members of the MAP kinase family including ERK1, ERK2, and JNK. It is a target for the ZAP-70 kinase, and phosphorylation of VHR at tyrosine 138 leads to a downregulation of ERK2 activity. Its welldefined biochemistry has made VHR useful in screening assays for compounds that inhibit phosphatases.

### Selected References:

- Todd *et al.* (1999) Extracellular regulated kinases (ERK) 1 and ERK2 are authentic substrates for the dual-specificity protein-tyrosine phosphatase VHR. A novel role in down-regulating the ERK pathway. *J. Biol. Chem.* **274**:13271.
- Alonso *et al.* (2001) Inhibitory role for dual specificity phosphatase VHR in T cell antigen receptor and CD28-induced Erk and Jnk activation. *J. Biol. Chem.* **276**:4766.