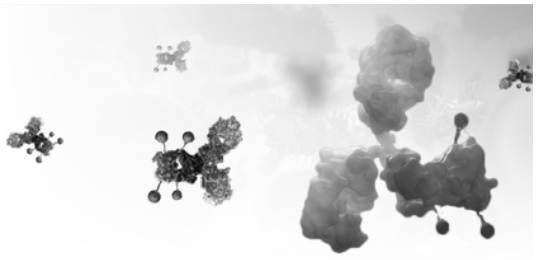

Rabbit Anti-3-pHis Monoclonal Antibody, clone TD40-7 (CABT-B1530)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Specificity	This antibody is specific for 3-pHis and does not cross react with phosphotyrosine (pTyr) or the other pHis isomers. It detects various proteins containing 3-pHis, such as SCS and ACLY.
Immunogen	3-pTza library conjugated to the carrier protein keyhole limpet hemocyanin (KLH).
Isotype	IgG
Source/Host	Rabbit
Species Reactivity	N/A
Clone	TD40-7
Purification	Protein A purified
Conjugate	Unconjugated
Applications	WB
Format	Liquid
Concentration	Lot specific
Size	100 µl
Buffer	PBS with 0.02% Proclin 300.
Preservative	None
Storage	Store at 4℃ for up to 3 months. For longer storage, aliquot and store at -20℃.

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Ship	Wet ice

BACKGROUND

Introduction	Phosphorylation plays an important role in regulating protein activities and various cellular signaling events in cells. Limited by the tools available for phosphohistidine (pHis) detection, the majority of studies focus on serine, threonine, and tyrosine phosphorylations. Histidine phosphorylation can occur at either N1 (1-pHis) or N3 (3-pHis) of the imidazole ring. The development of peptides containing stable phosphoryltriazolylalanine analogues of 1-pHis and 3- pHis (1-pTza and 3-pTza) allows the generation of antibodies for studying both histidine N1 and N3 phosphorylations in signaling events. There is growing evidence implicating His kinases in cancer and tumor metastasis and the first metastasis suppressor gene identified is one of the two known mammalian His kinases, Nm23-H1 (also known as NME1, nucleoside diphosphate kinase, or NDPK-A). Nm23-H1/NME1 and the closely related Nm23-H2 (NME2/NDPK-B) catalyze the transfer of phosphate from ATP onto Nucleoside-diphosphates (NDPs) through a 1-pHis enzyme intermediate. Nm23-H1/-H2 also possess His kinase activity, transferring the phosphate from the active site pHis onto a His in a target protein. Metabolic enzymes such as phosphoglycerate mutase (PGAM), succinyl CoA synthase (SCS), and ATP citrate lyase (ACL) also use pHis as an enzyme intermediate. Unlike NME1/2, PGAM uses 3-pHis as an enzyme intermediate. In addition to eukaryotes, histidine phosphorylation is well documented in bacterial "two-component" signaling pathways involved in chemotaxis, although the phosphate is transferred from the pHis formed in the receptor/sensor protein to Asp residues of an acceptor response regulator protein, and the receptor/sensor protein essentially functions as an aspartate kinase.
Keywords	3-pHis;N3-Phosphohistidine

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