



## **DDX3 (DEAD Box Protein 3 X-chromosomal, DBX, Helicase-Like Protein 2, HLP2)**

### **Catalog number**

D1660-20C

### **Supplier**

United States Biological

The DEAD box family of RNA helicases is characterized in part by a common D-E-A-D amino acid motif. The family is composed of a growing number of proteins found in a wide range of organisms from bacteria to mammals. DEAD helicases have distinct biological functions in RNA metabolism and ribonucleoprotein (RNP) processing (reviewed in 1,2).

**DDX3 is a DEAD box family RNA helicase with diverse cellular functions. DDX3 is required for nuclear export of HIV-1 viral transcripts, possibly in a complex with the viral Rev protein and host cofactor CRM1 (3). DDX3 is required for hepatitis C virus (HCV) RNA replication (4) and its expression is downregulated in hepatitis B virus (HBV) associated hepatocellular carcinoma (HCC) (5).**

**Recent evidence suggests that DDX3 functions as a tumor suppressor protein. Its expression inhibits tumor cell colony formation and increases expression of the cdk inhibitor p21 Waf1/Cip1. Low DDX3 expression has been shown in HCC (5,6), and aberrant subcellular localization occurs in many squamous cell carcinomas (6). Reduced DDX3 expression in cultured cells causes a diminished dependence on serum for cell proliferation and changes in cyclin D1 and p21 Waf1/Cip1 expression (5).**

**DDX3 is phosphorylated at Thr204 and Thr323 by the mitotic cyclin dependent kinase, cyclin B/cdc2. This phosphorylation is thought to cause a loss of DDX3 function and a concomitant repression of ribosome biogenesis and translation in mitosis (7).**

### **Applications**

Suitable for use in Western Blot. Other applications not tested.

### **Recommended Dilution**

Western Blot: 1:1000, incubate membrane with diluted antibody in 5% BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.  
Optimal dilutions to be determined by the researcher.

### **Storage and Stability**

May be stored at 4°C for short-term only. Aliquot to avoid repeated freezing and thawing. Store at -20°C. Aliquots are stable for 12 months. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap.

### **Immunogen**

Synthetic peptide corresponding to the N-terminal sequence of human DDX3.

### **Formulation**

Supplied as a liquid in 10mM sodium HEPES, pH 7.5, 150mM sodium chloride, 0.1mg/ml BSA, 50%



glycerol.

**Purity**

Purified by Protein A and peptide affinity chromatography.

**Specificity**

Recognizes endogenous levels of total human DDX3 protein. Species crossreactivity: hamster, mouse, monkey and rat.

**Product Type**

Pab

**Source**

human

**Isotype**

IgG

**Grade**

Affinity Purified

**Applications**

WB

**Crossreactivity**

Hm Hu Mk Mo Rt

**Storage**

-20°C

**MW**

75

**Reference**

(1) Rocak, S. and Linder, P. (2004) Nat Rev Mol Cell Biol 5, 232-41. (2) Linder, P. (2006) Nucleic Acids Res 34, 4168-80. (3) Yedavalli, V.S. et al. (2004) Cell 119, 381-92. (4) Ariumi, Y. et al. (2007) J Virol 81, 13922-6. (5) Chang, P.C. et al. (2006) Oncogene 25, 1991-2003. (6) Chao, C.H. et al. (2006) Cancer Res 66, 6579-88. (7) Sekiguchi, T. and Fukumura, J. (2005) J Biol Chem, Epub ahead of print. (8) Sekiguchi, T. et al. (2007) Biochem Biophys Res Commun 356, 668-73.