# CYB561D2 (h): 293T Lysate: sc-116117



The Power to Question

### **BACKGROUND**

CYB561D2 (cytochrome  $\beta$ 561 domain-containing protein 2), also known as putative tumor suppressor protein 101F6, is a 222 amino acid highly hydrophobic protein that contains 6 membrane spanning domains. Localized to endosomes and endoplasmic reticulum of the perinuclear region, CYB561D2 contains two heme-binding sites, through which it reduces ferric ions. CYB561D2 is ubiquitously expressed, with highest levels in lung, liver and kidney. Though expression of CYB561D2 is abundant in normal lung bronchial epithileal cells, CYB561D2 is absent in most lung cancers. The gene encoding CYB561D2 maps to human chromosome 3p21.31, a region that is prone to genetic alterations and is associated with frequent and early allele loss in many human cancers. Exogenous expression of CYB561D2 leads to the induction of caspase-independent apoptotic and autophagic pathways, resulting in the synergistic killing of tumor cells. This suggests an important role for CYB561D2 as a therapeutic intervention in cancer treatment.

# **REFERENCES**

- Lerman, M.I. and Minna, J.D. 2000. The 630-kb lung cancer homozygous deletion region on human chromosome 3p21.3: identification and evaluation of the resident candidate tumor suppressor genes. The international lung cancer chromosome 3p21.3 tumor suppressor gene consortium. Cancer Res. 60: 6116-6133.
- Ji, L., Nishizaki, M., Gao, B., Burbee, D., Kondo, M., Kamibayashi, C., Xu, K., Yen, N., Atkinson, E.N., Fang, B., Lerman, M.I., Roth, J.A. and Minna, J.D. 2002. Expression of several genes in the human chromosome 3p21.3 homozygous deletion region by an adenovirus vector results in tumor suppressor activities *in vitro* and *in vivo*. Cancer Res. 62: 2715-2720.
- 3. Chow, L.S., Lo, K.W., Kwong, J., To, K.F., Tsang, K.S., Lam, C.W., Dammann, R. and Huang, D.P. 2004. RASSF1A is a target tumor suppressor from 3p21.3 in nasopharyngeal carcinoma. Int. J. Cancer 109: 839-847.
- Angeloni, D. 2007. Molecular analysis of deletions in human chromosome 3p21 and the role of resident cancer genes in disease. Brief Funct. Genomic Proteomic 6: 19-39.
- Ohtani, S., Iwamaru, A., Deng, W., Ueda, K., Wu, G., Jayachandran, G., Kondo, S., Atkinson, E.N., Minna, J.D., Roth, J.A. and Ji, L. 2007. Tumor suppressor 101F6 and ascorbate synergistically and selectively inhibit non-small cell lung cancer growth by caspase-independent apoptosis and autophagy. Cancer Res. 67: 6293-6303.
- Mizutani, A., Sanuki, R., Kakimoto, K., Kojo, S. and Taketani, S. 2007. Involvement of 101F6, a homologue of cytochrome b561, in the reduction of ferric ions. J. Biochem. 142: 699-705.
- 7. Hesson, L.B., Cooper, W.N. and Latif, F. 2007. Evaluation of the 3p21.3 tumour-suppressor gene cluster. Oncogene 26: 7283-7301.

# **CHROMOSOMAL LOCATION**

Genetic locus: CYB561D2 (human) mapping to 3p21.31.

## **RESEARCH USE**

For research use only, not for use in diagnostic procedures.

#### **PRODUCT**

CYB561D2 (h): 293T Lysate represents a lysate of human CYB561D2 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

# **APPLICATIONS**

CYB561D2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CYB561D2 antibodies. Recommended use: 10-20  $\mu$ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

#### **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

# **PROTOCOLS**

See our web site at www.scbt.com for detailed protocols and support products.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3800 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com