

## SMYD2 Protein, Human, Recombinant (His)

### General Information

Synonyms:	ZMYND14;SET and MYND domain containing 2;HSKM-B;KMT3C
Protein Construction:	A DNA sequence encoding the full length of human SMYD2 (NP_064582.2) (Met 1-His 433) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q9NRG4-1
Molecular Weight:	52 kDa (predicted); 48 kDa (reducing conditions)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, 10% glycerol, pH 8.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

**Stability & Storage:**

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

**Shipping:**

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

SET and MYND domain-containing protein 2, also known as HSKM-B, SMYD2, and KMT3C, is a member of the SMYD protein family. It contains one MYND-type zinc finger and one SET domain. Not much is known about SMYD2. However, the interest in better understanding the roles of SMYD2 has grown because of reports indicating that SMYD2 methylates p53 and histone H3. In *Xenopus*, SMYD1 and SMYD2 were expressed in various muscle tissues and related to muscle cell differentiation. SMYD2 mRNA is most highly expressed in heart and brain tissue. Over-

expressed SMYD2 localizes to the cytoplasm and the nucleus in 293T cells. SMYD2 appears to restrain cell proliferation, likely through direct modulation of chromatin structure. Patients with SMYD2-overexpressing tumors had a worse overall rate of survival than those with non-expressing tumors, and SMYD2 positivity was independently associated with a worse outcome in the multivariate analysis. SMYD2 plays an important role in tumor cell proliferation through its activation/overexpression and regards as a prognosticator and potential therapeutic target in esophageal squamous cell carcinoma (ESCC).

### Reference

Zakut-Houri R.,et al.,(1985), Human p53 cellular tumor antigen: cDNA sequence and expression in COS cells. EMBO J. 4:1251-1255.

Lamb P.,et al., (1986), Characterization of the human p53 gene.Mol. Cell. Biol. 6:1379-1385.

Harlow E.,et al.,(1985), Molecular cloning and in vitro expression of a cDNA clone for human cellular tumor antigen p53.Mol. Cell. Biol. 5:1601-1610.

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