

EFO2 (K-15): sc-87710

BACKGROUND

EFO2 [establishment of cohesion 1 homolog 2 (*Saccharomyces cerevisiae*)] is also known as N-acetyltransferase ESCO2 and is a 601 amino acid protein. EFO2 can be detected throughout fetal tissue and is expressed in adult thymus, placenta and small intestine. EFO2 is thought to cause cohesion of sister chromatids during the S phase of the cell cycle. The C-terminal end of EFO2 may possess acetyltransferase activity, suggesting that EFO2 may also be involved in regulating chromatin structure and, ultimately, gene expression. Defects in the gene encoding EFO2 cause two cohesinopathies, referred to as Roberts syndrome (RBS) and SC phocomelia syndrome, also called SC pseudothalidomide syndrome. RBS is rare, and can have strongly expressed phenotypes, including growth retardation, both prenatal and postnatal, as well as symmetric mesomelia, microcephaly and stillbirth or death soon after birth. SC phocomelia syndrome has a higher rate of adulthood survival than RBS. While both SC phocomelia and RBS are characterized by limb reduction, SC phocomelia is also associated with underdeveloped facial features and contractures of flexion in joints.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609353. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Schüle, B., et al. 2005. Inactivating mutations in ESCO2 cause SC phocomelia and Roberts syndrome: no phenotype-genotype correlation. *Am. J. Hum. Genet.* 77: 1117-1128.
3. Hou, F., et al. 2005. Two human orthologues of Eco1/Ctf7 acetyltransferases are both required for proper sister-chromatid cohesion. *Mol. Biol. Cell* 16: 3908-3918.
4. Vega, H., et al. 2005. Roberts syndrome is caused by mutations in ESCO2, a human homolog of yeast ECO1 that is essential for the establishment of sister chromatid cohesion. *Nat. Genet.* 37: 468-470.
5. Resta, N., et al. 2006. A homozygous frameshift mutation in the ESCO2 gene: evidence of intertissue and interindividual variation in Nmd efficiency. *J. Cell. Physiol.* 209: 67-73.

CHROMOSOMAL LOCATION

Genetic locus: ESCO2 (human) mapping to 8p21.1; Esco2 (mouse) mapping to 14 D1.

SOURCE

EFO2 (K-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of EFO2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-87710 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EFO2 (K-15) is recommended for detection of EFO2 of human origin and ESCO2 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with EFO1.

EFO2 (K-15) is also recommended for detection of EFO2 in additional species, including equine and porcine.

Suitable for use as control antibody for EFO2 siRNA (h): sc-77558, ESCO2 siRNA (m): sc-144942, EFO2 shRNA Plasmid (h): sc-77558-SH, ESCO2 shRNA Plasmid (m): sc-144942-SH, EFO2 shRNA (h) Lentiviral Particles: sc-77558-V and ESCO2 shRNA (m) Lentiviral Particles: sc-144942-V.

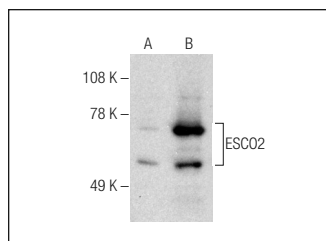
Molecular Weight of EFO2: 86 kDa.

Positive Controls: EFO2 (m): 293T Lysate: sc-120121.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



EFO2 (K-15): sc-87710. Western blot analysis of ESCO2 expression in non-transfected: sc-117752 (A) and mouse ESCO2 transfected: sc-120121 (B) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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