SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-2.5 (h3): 293T Lysate: sc-159567

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nkx-2.5, which is also designated cardiac specific homeobox protein (Csx), is a homeodomain-containing nuclear transcription protein of the Nkx-2 gene family. These transcriptional activators, which include thyroid transcription factor-1 (TTF-1), regulate the expression of tissue specific genes and are required for maintaining the differentiated phenotypes of various lineages. Nkx-2.5 is a homolog to the tinman protein expressed in *Drosophila*, and is essential for normal cardiovascular development. Expression of Nkx-2.5 during cardiomyogenesis is required for cardiac septation, in which a single atrium and ventricle are separated into four chambers. During embryonic development, Nkx-2.5 is also expressed in the foregut, thyroid, spleen and stomach, while in the adult expression is predominantly restricted to the heart. Mutations that disrupt Nkx-2.5 can result in atrial-septal defects, embryonic lethality and congenital heart disease.

REFERENCES

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3. Lints, T.J., et al. 1993. Nkx-2.5: a novel murine homeobox gene expressed in early heart progenitor cells and their myogenic descendants. Development 119: 419-431.
4. Turbay, D., et al. 1996. Molecular cloning, chromosomal mapping, and characterization of the human cardiac-specific homeobox gene hCsx. Mol. Med. 2: 86-96.
5. Schott, J.J., et al. 1998. Congenital heart disease caused by mutations in the transcription factor Nkx-2-5. Science 281: 108-111.
6. Tanaka, M., et al. 1999. The cardiac homeobox gene Csx/Nkx-2.5 lies genetically upstream of multiple genes essential for heart development. Development 126: 1269-1280.
7. Schwartz, R.J.. et al. 1999. Building the heart piece by piece: modularity of *cis*-elements regulating Nkx-2.5 transcription. Development 126: 4187-4192.
8. Xie, C.Q., et al. 2007. Transplantation of human undifferentiated embryonic stem cells into a myocardial infarction rat model. Stem Cells Dev. 16: 25-29.
9. Ventura, C., et al. 2007. Hyaluronan mixed esters of butyric and retinoic acid drive cardiac and endothelial fate in term placenta human mesenchymal stem cells and enhance cardiac repair in infarcted rat hearts. J. Biol. Chem. 282: 14243-14252.

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.

CHROMOSOMAL LOCATION

Genetic locus: NKX2-5 (human) mapping to 5q35.1.

PRODUCT

Nkx-2.5 (h3): 293T Lysate represents a lysate of human Nkx-2.5 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Nkx-2.5 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive Nkx-2.5 antibodies. Recommended use: 10-20 µl per lane.

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

RESEARCH USE

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