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### Zuschläge

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- Gefahrgutzuschlag
- Expressversand

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

## 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

1. Guazzi, S., et al. 1990. Thyroid nuclear factor 1 (TTF-1) contains a homeodomain and displays a novel DNA binding specificity. *EMBO J.* 9: 3631-3639.
2. Komuro, I., et al. 1993. Csx: a murine homeobox-containing gene specifically expressed in the developing heart. *Proc. Natl. Acad. Sci. USA* 90: 8145-8149.
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](http://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.