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Diagnostik & molekulare Diagnostik



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### Zuschläge

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- Gefahrgutzuschlag
- Expressversand

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# VRK1 (m): 293T Lysate: sc-124592

## BACKGROUND

Human vaccinia-related kinases 1 and 2 (VRK1/2) are NLS-containing, serine/threonine poxvirus-related kinases that are similar to casein kinase I family members. These VRK kinases phosphorylate transcription factors related to stress responses, such as p53. As an upstream regulator of p53, VRK1 is capable of phosphorylating phosphoinositide-dependent kinase-1, Histone 2b and Myelin basic protein. VRK1 colocalizes with ATF-2 in the nucleus and can form a stable complex. VRK1 phosphorylates ATF-2 mainly on Thr 73, stabilizing the ATF-2 protein and increasing its intracellular level. VRK1 phosphorylates human p53 in Thr 18 and disrupts p53-MDM2 interaction *in vitro*. VRK1 phosphorylates c-Jun in Ser 63 and Ser 73 *in vitro* (the same residues targeted by the N-terminal kinase of c-Jun (JNK)), and activates c-Jun-dependent transcription.

## REFERENCES

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2. Nezu, J., et al. 1997. Identification of two novel human putative serine/threonine kinases, VRK1 and VRK2, with structural similarity to vaccinia virus B1R kinase. *Genomics* 45: 327-331.
3. Lopez-Borges, S. and Lazo, P.A. 2000. The human vaccinia-related kinase 1 (VRK1) phosphorylates Threonine-18 within the MDM2 binding site of the p53 tumour suppressor protein. *Oncogene* 19: 3656-3664.
4. Nichols, R.J., et al. 2004. Characterization of three paralogous members of the mammalian vaccinia related kinase family. *J. Biol. Chem.* 279: 7934-7946.
5. Boyle, K.A., et al. 2004. Members of a novel family of mammalian protein kinases complement the DNA-negative phenotype of a vaccinia virus ts mutant defective in the B1 kinase. *J. Virol.* 78: 1992-2005.
6. Sevilla, A., et al. 2004. Human vaccinia-related kinase 1 (VRK1) activates the ATF-2 transcriptional activity by novel phosphorylation on Thr 73 and Ser 62 and cooperates with JNK. *J. Biol. Chem.* 279: 27458-27465.
7. Sevilla, A., et al. 2004. c-Jun phosphorylation by the human vaccinia-related kinase 1 (VRK1) and its cooperation with the N-terminal kinase of c-Jun (JNK). *Oncogene* 23: 8950-8958.
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## CHROMOSOMAL LOCATION

Genetic locus: Vrk1 (mouse) mapping to 12 F1.

## PRODUCT

VRK1 (m): 293T Lysate represents a lysate of mouse VRK1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## 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.

## APPLICATIONS

VRK1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive VRK1 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.