SANTA CRUZ BIOTECHNOLOGY, INC.

JWA siRNA (h): sc-60874

BACKGROUND

JWA is a four-transmembrane environmental responsive protein which binds to the CC chemokine recepor 5 (CCR5), a major co-receptor for human immunodeficiency virus (HIV). JWA is involved in environmental stress-responsive pathways in K-562 cells, an erythroleukemia cell line derived from patients with chronic myeloid leukemia. Environmental stressors to K-562 cells such as heat shock, a higher temperature than the ideal body temperature of the organism from which the cell line was derived, and oxidative stress, the production of oxygen-centered free radicals, regulate and increase the expression of JWA. This response to environmental stressors suggests similiarity of JWA to heat shock protein 70 (HSP70), which is upregulated by heat stress and toxic chemicals.

REFERENCES

1. Samson, M., et al. 1996. Molecular cloning and functional expression of a new human CC chemokine receptor gene. Biochemistry 35: 3362-3367.
2. Mao, W.G., et al. 2004. Effect of differentiation inducer and heat stress on the expression of JWA protein and HSP 70 of K-562 cells. Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi 21: 253-256.
3. Mao, W.G., et al. 2004. Expressions of Jinducers combined with heat stress in K-562 cells. Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi 22: 60-63.
4. Schweneker, M., et al. 2005. JM4 is a four-transmembrane protein binding to the CCR5 receptor. FEBS Lett. 579: 1751-1758.
5. Chen, R., et al. 2005. JWA—a novel environmental-responsive gene, involved in estrogen receptor-associated signal pathway in MCF-7 and MDA-MB-231 breast carcinoma cells. J. Toxicol. Environ. Health A 68: 445-456.
6. Shen, Q., et al. 2005. JWA gene in regulating committed differentiation of HL-60 cells induced by ATRA, Ara-C and TPA. Zhongguo Shi Yan Xue Ye Xue Za Zhi 13: 804-808.
7. Zhu, T., et al. 2005. Regulation of a novel cell differentiation-associated gene, JWA during oxidative damage in K-562 and MCF7 cells. J. Biomed. Sci. 12: 219-227.

CHROMOSOMAL LOCATION

Genetic locus: ARL6IP5 (human) mapping to 3p14.1.

PRODUCT

JWA siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see JWA shRNA Plasmid (h): sc-60874-SH and JWA shRNA (h) Lentiviral Particles: sc-60874-V as alternate gene silencing products.

For independent verification of JWA (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60874A, sc-60874B and sc-60874C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

JWA siRNA (h) is recommended for the inhibition of JWA expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor JWA gene expression knockdown using RT-PCR Primer: JWA (h)-PR: sc-60874-PR (20 µl, 543 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, Y.Y., et al. 2014. JWA gene regulates PANC-1 pancreatic cancer cell behaviors through MEK-ERK1/2 of the MAPK signaling pathway. Oncol. Lett. 8: 1859-1863.
2. Chen, X., et al. 2015. Effects of the JWA gene in the regulation of human breast cancer cells. Mol. Med. Rep. 11: 3848-3853.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.