SANTA CRUZ BIOTECHNOLOGY, INC.

PAR4 (1-334): sc-4216 WB

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Normal tissues are characterized by a balance between cellular stasis, cell proliferation, cell differentiation and cell death. Aberrant regulation of any of these cell processes can result in cancer. Cell death during embryogenesis, tissue atrophy and normal tissue turnover is called apoptosis and is characterized by cytoplasmic and nuclear condensation, nuclear disorganization and fragmentation of genomic DNA into 180-200 base pair oligomers. Five ionomycin-inducible complementary cDNAs, designated PAR1, 2, 3, 4 and 5, have been isolated from the prostate cancer cell line AT-3. Nucleotide sequencing identified PAR1 as the rat homolog of MKP-1, PAR2 as the injury-inducible gene HB-EGF, and PAR3 as the serum-induced gene Cyr61. PAR4 and PAR5 sequences were not found to correspond to any previously described proteins. PAR4 (prostate apoptosis response-4) is specifically expressed by cells entering apoptosis and is not inducible by growth factor stimulation, oxidative stress and necrosis, or growth arrest. The PAR4 gene encodes a 38 kDa protein with a putative nuclear localization signal and carboxy terminal leucine zipper.

REFERENCES

1. Sells, S.F., Wood, D.P. Jr., Joshi-Barve, S.S., Muthukumar, S., Jacob, R.J., Crist, S.A., Humphreys, S., and Rangnekar, V.M. 1994. Commonality of the gene programs induced by effectors of apoptosis in androgen-dependent and -independent prostate cells. Cell Growth Differ. 5: 457-466.
2. Hengartner, M.O. 1995. Out-of-body experiences: cell-free cell death. Bioessays 17: 549-552.
3. Eastman, A. 1995. Survival factors, intracellular signal transduction, and the activation of endonucleases in apoptosis. Sem. Cancer Biol. 6: 45-52.
4. King, K.L. and Cidlowski, J.A. 1995. Cell cycle and apoptosis: common pathways to life and death. J. Cell. Biochem. 58: 175-180.
5. Columbano, A. 1995. Cell death: current difficulties in discriminating apoptosis from necrosis in the context of pathological processes *in vivo*. J. Cell. Biochem. 58: 181-190.
6. Kroemer, G., Petit, P., Zamzami, N., Vayssiere, J.L., and Mignotte, B. 1995. The biochemistry of programmed cell death. FASEB J. 9: 1277-1287.
7. McDonnell, T.J., Meyn, R.E., and Robertson, L.E. 1995. Implications of apoptotic cell death regulation in cancer therapy. Sem. Cancer Biol. 6: 53-60.

SOURCE

PAR4 (1-334) is expressed in *E. coli* as a 50 kDa polyhistidine tagged fusion protein of rat origin corresponding to amino acids 1-334 of PAR4.

PRODUCT

PAR4 (1-334) is purified from bacterial lysates (>98%) by Ni^{++} affinity chromatography; supplied as 10 µg in 0.1 ml SDS-PAGE loading buffer.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

APPLICATIONS

PAR4 (1-334) is suitable as a Western blotting control for sc-1249, sc-1666 and sc-1807.

RESEARCH USE

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