

BACKGROUND

Prostate apoptosis response, PAR-4, encodes a 38 kDa protein that belongs to the family of immediate-early gene products, which include c-Myc, c-Fos, c-Jun, Nur77, and EGR-1. Unlike the other immediate-early gene products, par-4 expression appears to be induced exclusively by apoptotic stimuli.¹ The carboxyl-terminal portion of the Par-4 protein contains a death domain homologous to that of Fas and TRADD and may, therefore, initiate a cascade of events analogous to that of other death domain-containing proteins. PAR-4 has been shown to interact with several proteins known to modulate apoptosis, including protein kinase Czeta, Bcl-2, and caspase-8. A rapid increase in Par-4 levels occurs in neurons undergoing apoptosis in a variety of paradigms, including trophic factor withdrawal, and exposure to oxidative and metabolic insults. Par-4, which can be induced at the translational level, acts at an early stage of the apoptotic cascade prior to caspase activation and mitochondrial dysfunction. The mechanism whereby Par-4 promotes apoptosis may involve inhibition of the antiapoptotic transcription factor NF-kappaB and suppression of Bcl-2 expression and/or function.² Within the death domain of Par-4 is a leucine zipper domain that appears to mediate protein-protein interactions. Because of the widespread up-regulated expression of par-4 in neuronal cells induced to undergo apoptosis, it was suggested that the Par-4 protein may play a role in the pathogenesis of neurodegenerative disorders.³

References:

1. Rangnekar VM: Apoptosis 3:61-66, 1998.
2. El-Guendy N & Rangnekar VM: Exp. Cell Res. 283:51-66, 2003.
3. Guo Q et al.: J. Biol. Chem. 276: 16040-16044, 2001.

TECHNICAL INFORMATION

Source:

PAR-4 Antibody is a mouse monoclonal antibody raised against the purified recombinant fragment of human PAR-4 (aa1-330) expressed in *E. Coli*.

Specificity and Sensitivity:

This monoclonal antibody detects endogenous levels of PAR-4 proteins in various cell lysates.

Storage Buffer: PBS and 30% glycerol

Storage:

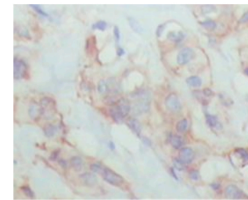
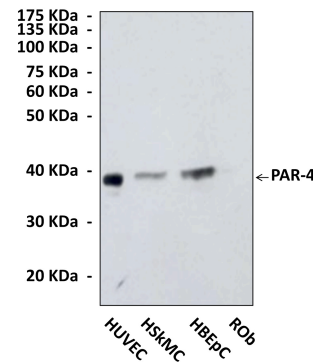
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	n/d
ICC	n/d
FACS	n/d

*Optimal dilutions must be determined by end user.

QUALITY CONTROL DATA



Top: Various primary cell lysates were subjected to Western Blot analysis using PAR-4 Antibody, including: HUVEC: Human Umbilical Vein Endothelial Cells, HSkMC: Human Skeletal Muscle Cells, HBEPc: Human Bronchial Epithelial Cells, ROB: Rat Osteoblasts. **Bottom:** Immunohistochemical analysis of paraffin-embedded breast cancer tissue using PAR-4 Antibody.

