

## BACKGROUND

The ETS family of transcription factors, characterized by an evolutionarily conserved DNA-binding domain, regulates expression of more than 300 target genes by binding to a purine-rich GGAA/T core sequence. Depending on the cellular context, they can function as transactivators or transrepressors. Ets proteins have been implicated in regulation of gene expression during a variety of biological processes, including growth control, transformation, T-cell activation, and developmental programs in many organisms. Signals regulating cell growth are transmitted from outside the cell to the nucleus by growth factors and their receptors, G-proteins, kinases and transcription factors. It was shown that ETS signal transduction is implicated in hematopoiesis and angiogenesis at the earliest stages of embryogenesis, and is later involved in tissue development. Deregulated expression and/or formation of chimeric fusion proteins of the ETS family due to proviral insertion or chromosome translocation is associated with leukemias and with specific types of solid tumors.<sup>1</sup>

Among the multiple Ets proteins, the PEA3 group consists of ETV1 (Ets variant gene 1; also called ER81), ETV4 (also called PEA3) and ETV5 (also called ERM). All three members are 95% identical in the ETS domain and more than 85% in the acidic transactivation domain. Several studies suggest that the PEA3 group proteins are involved in intestinal tumors, gastric cancer, and breast cancer metastasis. In nearly all Ewing's sarcoma tumors, EWS, which encodes a RNA-binding protein, is fused by chromosomal translocation to an Ets gene, including FLI, ERG, ETV4, and ETV1. These results in the expression of chimeric proteins that may be important in tumor cell transformation.<sup>2</sup> Recently, it was reported that TMPRSS2, an AR-regulated gene, is fused by translocation to the ETV1, ERG, or ETV4 gene in a subset of prostate cancers. These findings suggest an important role for PEA3 proteins in prostate cancer.<sup>3</sup>

### References:

1. Wasylyk, B. et al: Eur. J. Biochem. 211:7-18, 2005
2. Maher, C.A. et al: Nature 458:97-101, 2009
3. Cai, C. et al: Mol. Endocrinol.25:1835-46, 2007

## TECHNICAL INFORMATION

### Source:

ETV4 Antibody is mouse monoclonal antibody raised against purified recombinant human ETV4 fragment expressed in 293 cells.

### Specificity and Sensitivity:

This antibody detects endogenous ETV4 proteins without cross-reactivity with other family members.

**Storage Buffer:** PBS and 30% glycerol

### Storage:

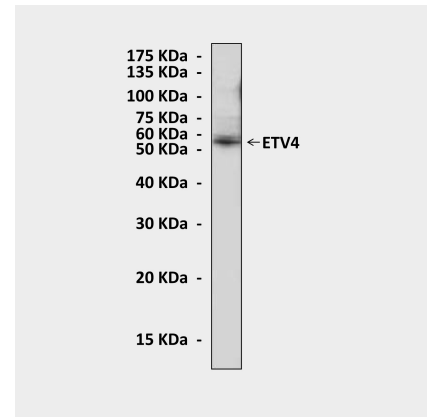
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:1,000
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

*\*Optimal dilutions must be determined by end user.*

## QUALITY CONTROL DATA



Western Blot detection of ETV4 proteins in K562 cell lysate using ETV4 Antibody.

