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Prostate Cancer induced cancer marker proteins

Transmembrane prostate Androgen-induced protein A1 (TMEPA1) antibodies Cat # TMEPA1-101AP and P-TMEPA1)

Alternate nomenclature: NEDD4 ww domain binding protein 4, Solid tumor associated protein 1.

The abnormal activation of the epidermal growth factor (EGF) pathway is one of the most common findings in human cancer, and a number of molecular devices of laboratory and clinical relevance have been designed to block this transduction pathway. The activation of 4 EGF receptor family members resulted in a large number of cellular events that might be regulating the metastasis and cell growth. The identification of new molecular targets working downstream of these pathways may provide new sites for therapeutic interventions for cancer diagnosis and potentially prevention and therapy. Several EGF target genes have been identified, one of them is Erg1.2 a mouse homolog of the solid tumor associated gene STAG1. Both in humans and in mice, it belongs to a new gene family that can give origin to several protein isoforms through alternative splicing and/or multiple translation starts. Sequence analysis and experimental data suggest that ERG1.2 is likely to function as a membrane-bound protein interacting with downstream signaling molecules through WW- and SH3-binding domains. Other members of this family include TMEPA1, and TPD52. PMEPA1 was identified originally as a highly androgen-inducible gene with prostate-abundant expression that was restricted to prostatic epithelial cells. PMEPA1 protein is a NEDD4 (ubiquitin-protein isopeptide ligase)-binding protein, which negatively regulates prostate cancer cell growth (1). During prostate cancer progression TMEPA1 gene transcription is reduced or lost suggesting a direct role of epigenetic events in this process. PMEPA1 negatively regulates AR protein levels in different cell culture models. Transient expression of PMEPA1 down-regulates AR protein levels and AR transcriptional targets in prostate cancer cells. Conversely, knockdown of PMEPA1 leads to elevated levels of AR protein, AR transcriptional targets (prostate-specific antigen), and increased cell cycle S phase. The TMEPA1 mutant cells are impaired in NEDD4 recruitment shows attenuated AR ubiquitination and AR protein down-regulation.

Certain epigenetic cascade events contributes to the selective growth advantage during tumor progression. During prostate cancer progression the TMEPA1 gene is reduced or lost as a result of DNA methylation of SP1 sites within the PMEPA1 promoter may also contribute to the repression of PMEPA1 gene (2). The TMEPA1 negatively regulates the stability of AR protein by enhancing AR ubiquitination and proteasome-mediated degradation through NEDD4 and the TMEPA1-AR degradation pathway may represent a new androgen-dependent mechanism for regulating AR levels in prostate epithelial cells. The decrease in TMEPA1 in prostate cancers may lead to an increase in AR function and strengthen the biological role of TMEPA1 in prostate cancers. TMEPA1 is a 254 amino acid (apparent MW 30-31kDa) protein highly expressed in prostate cells.

The TMEPA1-selective antibodies were generated against purified protein. The TMEPA1 protein was emulsified with adjuvants to achieve the desired antigenicity before injecting in to rabbits to obtained antibodies. The antibodies were isolated on an immobilized antigen based affinity matrix before stabilizing them in antibody stabilization buffer. The TMEPA1 antibodies label TMEPA1 protein as a single 30kDa band in PC-TMEPA1 samples. FabGennix Inc. provides Western blot positive controls for TMEPA1 in ready-to-use buffer for SDS-PAGE and western blotting applications. Limited quantities of antigenic blocking peptides for this antibody is also available (Inquire before placing orders). For a complete listing of all cancer and diagnostic related antibodies, visit our website at www.FabGennix.com.

Catalog #	Description	Host	Cross reactivity	Qty
TMEPA1-101AP	Trans membrane prostate induced protein A1 (TMEPA1)	Rabbit	Human	100 ug
P-TMEPA1	Antigenic blocking protein for TMEPA1-101AP	s	human	250ug
PC-TMEPA1	Western blot positive control for TMEPA1	n/a	n/a	5 appls

R = rat; M = mouse; H = humans; R = rabbit * Actual volume is 103-110 µl; WB, Western Blot analyses; IMM, Immunoprecipitation; IHC, Immunohistochemistry, n.d. not determine.

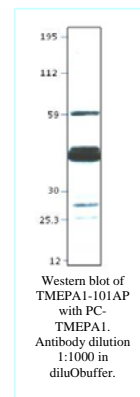
Immunogen: Purified TMEPA1 protein as emulsified in adjuvant to raise anti-TMEPA1 antibodies.
Concentration: Antibodies TMEPA1-101AP are purified on immobilized antigen based affinity chromatography, purified immunoglobulin concentration is in the range of 0.65-0.694mg/ml in antibody stabilization buffer.
Applications: ELISA/dot blot: Antibody dilution 1:20,000-1:50,000;. Western blot: Antibody dilution 1:500-1,000 in diluOBuffer. PC-TMEPA1 sample 25ul/lane. Other applications (IHC, confocal and Immunoprecipitation for these antibodies are not yet established.
Reactivity The antibodies TMEPA1-101AP label a 31-32kDa doublet TMEPA1 protein in PC-TMEPA1 samples.
Protocols: Description and use of this antibody in various applications is provided with the product. Standard protocol for various applications (Western blot; immunoprecipitation and immunohistochemistry) of this antibody can be requested by calling our Technical support line. The recommended dilutions are for reference only and FabGennix Inc. strongly recommends investigators to optimize conditions for use of this product in their laboratories.
Form/Storage: The antiserum is supplied in antibody stabilization buffer with preservatives. For long-term storage of antibody, store at -20°C FabGennix Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45µm filter after every use for long-term storage.

***Note:** Briefly centrifuge to collect liquid, heat or boil PC-TPD52 tube for 1-2 minutes to dissolve any precipitate before use. This product is "ready-to-use" for electrophoresis. After thawing store at room temperature, Repeated freezing and thawing may result in appearance of higher molecular weight immunoreactive bands.

Now Western blots can be stripped and recycle using our specially formulated StripOBuffer (Cat # FGI-1989) up to 8 times with out any distortion and significant loss in signal to noise ratios. This stripping buffer does not require heating or have any pungent smell.

References:

- Li H, Xu LL, Masuda K, Raymundo E, McLeod DG, Dobi A, Srivastava S. A feedback loop between the androgen receptor and a NEDD4-binding protein, PMEPA1, in prostate cancer cells. J Biol Chem. 2008 Oct 24;283(43):28988-95.
- Richter E, Masuda K, Cook C, Ehrlich M, Tadese AY, Li H, Owusu A, Srivastava S, Dobi A. A role for DNA methylation in regulating the growth suppressor PMEPA1 gene in prostate cancer. Epigenetics. 2007 Apr-Jun;2(2):100-9. Erratum in: Epigenetics. 2008 Jan-Feb;3(1):51.



* For users who may require large amounts of TMEPA1-101AP and P-TMEPA1, please enquire about bulk material discounts. This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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