Qty: 100 µg/400 µL

Rabbit anti-Smad7 (C-term)

Catalog No. 42-0400
Lot No.

Rabbit anti-Smad7 (C-term)

FORM
This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.520

IMMUNOGEN
Synthetic peptide derived from the C-terminal region of the human, mouse, rat, bovine, chimpanzee, and dog Smad7 proteins

SPECIFICITY
This antibody is specific for the Smad7 (mothers against decapentaplegic homolog 7) protein. On Western blots, it identifies the target band at ~45 kDa.

REACTIVITY
Reactivity has been confirmed with human A549 cell lysates and mouse and rat lung homogenates. Based on amino acid sequence homology, reactivity with bovine, chimpanzee and dog is expected.

Sample	Western Blotting	Immuno-precipitation
Human	+++	ND
Mouse	+++	ND
Rat	+++	0*
Dog	ND	ND
Chimpanzee	ND	ND

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)
*No reactivity observed under conditions tested.

USAGE
Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 1-3 µg/mL

STORAGE
Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

BACKGROUND

Smad proteins, the mammalian homologs of the Drosophila Mothers against dpp (Mad) have been implicated as downstream effectors of TGFβ/BMP signaling.[1,2] Members of the Smad family transmit TGF-β signals from the cell surface into the nucleus. Once in the nucleus, Smads can target a variety of DNA binding proteins to regulate transcriptional responses.[3,4] Three distinct classes of Smads have been defined: the receptor-regulated Smads (R-Smads), which include Smad1, 2, 3, 5, 8; the common-mediator Smads (co-Smads), including Smad4 and the antagonistic or inhibitory Smads (I-Smads), including Smad6 and Smad7.[1,5-8]

Smad6 and Smad7 regulate the response to activin/TGF-β signaling by interfering with TGF-β-mediated phosphorylation of other Smad family members.[9-10] Smad7 is highly expressed in the lung and reduces excessive TGF-β signaling during lung morphogenesis development, injury and repair.[11] Activators of either NF-κB (e.g., TNF-α and IL-1β) or STAT-1 (e.g., IFN-γ) pathway can enhance Smad7 expression[12,13]. Smad7 blockade of TGF-β1 signaling helps maintain the chronic production of proinflammatory cytokines that drives the inflammatory process in chronic inflammatory bowel disease (IBD).[14] High expression of Smad7 in inflammatory cells renders them unresponsive to TGF-β1, and control of Smad7, not TGF-β1 production determines how TGF-β1 negatively regulates gut inflammation.[15] Induction of Smad7 was found to inhibit renal fibrosis and inflammation, and targeting Smad signalling by overexpression of Smad7 may have great therapeutic potential for kidney diseases.[16] Smad7 is upregulated in several cancers including endometrial cancer.[17] Smad7 induces tumorigenicity by blocking TGF-β-induced growth inhibition and apoptosis.[18]

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