



Qty: 100 µg/400 µL

Rabbit anti-T-box 3

Catalog No. 42-4800

Lot No.

Rabbit anti-T-box 3

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.569

IMMUNOGEN

Synthetic peptide derived from an internal region of human T-box 3, which differs from mouse and rat by one conservative and one non-conservative amino acid

SPECIFICITY

This antibody is specific for T-box 3 (Tbx3). On Western blots, it identifies the target band at ~79 kDa.

REACTIVITY

Reactivity has been confirmed with human BT-474 breast ductal carcinoma cell lysates by Western blotting and immunoprecipitation. Based on amino acid sequence homology, reactivity with mouse and rat is also expected.

| Sample | Western Blotting | Immunoprecipitation |
|-----------|------------------|---------------------|
| Human | ++ | +++ |
| Mouse | ND | ND |
| Rat | ND | ND |
| Immunogen | N/A | N/A |

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

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 concentrations are recommended starting points for this product.

Western Blotting: 1-3 µg/mL

Immunoprecipitation: 5 µg/IP reaction

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)

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(Rev 10/08) DCC-08-1089

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BACKGROUND

T-box 3 (TBX3) is a member of a phylogenetically conserved family of genes that share a common DNA-binding domain, the T-box¹. *T-box* genes encode transcription factors involved in the regulation of developmental processes. The Tbx3 protein is a transcriptional repressor that binds the canonical Brachyury binding sites, and is thought to play a role in the anterior/posterior axis of the tetrapod forelimb². Tbx3 is required for normal mammary development and is also implicated in tumor development³. Tbx3 expression also increases during osteoblast differentiation, and may function as a determinant of osteoblast cell numbers⁴.

Mutations in *T-box 3* cause ulnar-mammary syndrome (MIM 181450), affecting limb, apocrine gland, tooth, hair, and genital development⁵. Alternative splicing results in three transcript variants encoding different isoforms; however, the nature of one full length variant has not been determined. Subsets of human breast cancer cell lines overexpress *TBX3*⁶. *In vitro*, Tbx3 overexpression in mouse embryo fibroblasts leads to immortalization of cells⁷. Truncated forms of Tbx3 are increased in plasma samples from ovarian and breast cancer patients, indicating that it may be a potential tumor marker⁸.

REFERENCES

1. Coll M, et al. *Structure* 10(3):343-256, 2002.
2. He M, et al. *PNAS* 96(18):10212-10217, 1999.
3. Rowley M, et al. *J Mammary Gland Biol Neoplasia* 9(2):109-118, 2004.
4. Govoni KE, et al. *Am J Physiol Endocrinol Metab*. Feb 7 2006.
5. Bamshad M, et al. *Nature Genet* 16(3):311-315, 1997.
6. Fan W, et al. *Cancer Res* 64(15):5132-5139, 2004.
7. Carlson H, et al. *Hum Mol Genet* 10(21):2403-2413, 2001.
8. Lomnyska M, et al. *Int J Cancer* 118(2):412-421, 2006.

RELATED PRODUCTS

| Product | Conjugate | Cat. No. |
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| rec-Protein G | Sepharose® 4B | 10-1241 |

| Conjugate | ZyMAX™ Goat x Rabbit IgG (H+L) | ZyMAX™ Goat x Mouse IgG (H+L) |
|------------------|---------------------------------------|--------------------------------------|
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