

## Target-Validated and Characterized IVD Antibodies for Pathology and Immunotherapy



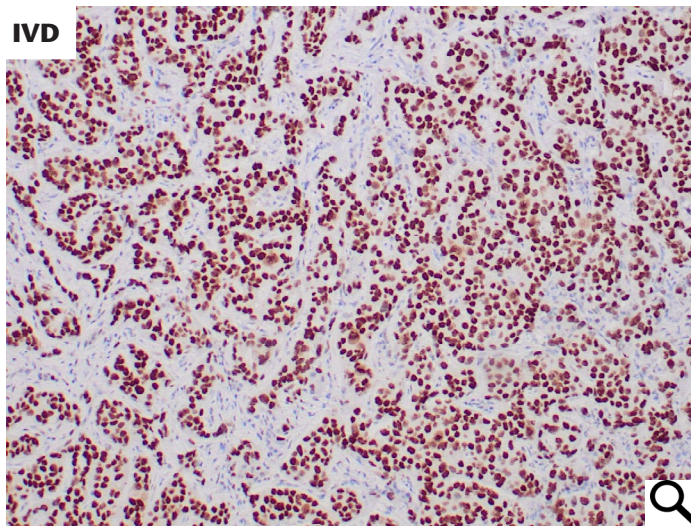
### NEW PRODUCT FOCUS -- TRPS1 antibody, clone ZR382 (RAbMono™)

**TRPS1: a highly specific and sensitive marker for all types of breast carcinomas, especially TNBC.**

Currently there is no highly specific and sensitive marker to identify breast cancer—the most common malignancy in women. Breast cancer can be categorized as estrogen receptor (ER)/progesterone receptor (PR)-positive luminal, human epidermal growth factor receptor 2 (HER2)-positive, or triple-negative breast cancer (TNBC) types based on the expression of ER, PR, and HER2. Although GATA3, mammaglobin, and GCDFP15 are the most widely used tumor markers at present to determine the breast origin, which has been shown to be an excellent marker for ER-positive and low-grade breast cancer, but it does not work well for TNBC with sensitivity as low as <20% in metaplastic breast carcinoma. In addition, GATA3 is high expressed in urothelial carcinoma and in normal lymphoid tissue.

Tricho-Rhino-phalangeal Syndrome Type 1 (TRPS1), named for its association with the autosomal dominant genetic disorder TRPS1, has been found to be a critical modulator in mesenchymal-to-epithelial transition during the development and differentiation of several types of tissue, including cartilage, bone, kidney, and hair follicle. Recently, TRPS1 was identified to be a novel GATA transcriptional factor, functioning as an essential regulator for growth and differentiation of normal mammary epithelial cells and possibly involved in the development of breast cancer.

A recent study showed that TRPS1, which is highly expressed in triple-negative breast carcinoma (TNBC), was significantly higher than GATA3 expression in metaplastic (85% vs. 21%) and nonmetaplastic (86% vs. 51%) TNBC. Among non-breast tumors, TRPS1 is only expressed in some cases of lung squamous cell carcinoma, urothelial carcinoma (<2%), and ovarian adenocarcinoma. Therefore, TRPS1 has been found to be a highly specific and sensitive marker for all types of breast carcinomas, especially TNBC.



*Formalin-fixed, paraffin-embedded human breast carcinoma stained with anti-TRPS1 antibody using peroxidase-conjugate and DAB chromogen. Note the nuclear staining of tumor cells.*

#### References:

1. Ai D, et al. *Mod Pathol* 2021; **34**:710-719.
2. Gornelissen LM, et al. *Genes Dev* 2020; **34**:179-193.
3. Radvanyi L, et al. *PNAS* 2005; **102**:11005-11010.

#### **TRPS1 rabbit monoclonal antibody**

**Clone:** ZR382

**Cat#:** Z2673



**About RAbMono™** Rabbit monoclonals designed and developed at Zeta are uniquely produced and target-validated for IHC on FFPE tissue sections. In contrast to typical mouse monoclonal technology, Zeta has achieved a unique and effective rabbit monoclonal production platform based on our unmatched expertise in the field. Generally, rabbit monoclonals are characterized by 10 to 100 times higher affinity than mouse monoclonals. The rabbit's immune system is better equipped to generate a response to smaller antigens that are not detected in mice. As a result, rabbit monoclonals are becoming increasingly popular in immunohistochemical detection of tumor markers in humans.

All antibodies are offered in different format and size with the Suffix after the Catalog #s; "L", "S" & "T" for Concentrated antibodies in 1.0 ml, 0.5 ml & 0.1 ml sizes and Suffix "P" for Ready To Use (RTU) in 7 ml.