



# ROS1 Zeta-Antibody ZR400

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## SUMMARY:

The proto-oncogene tyrosine-protein kinase-1 (ROS-1; c-Ros oncogene-1)-gene fusion is expressed in non-small cell lung cancer (NSCLC). The ROS1 Zeta-Antibody clone ZR400 readily assesses the ROS1 antigen as well as ROS1-fusion variants in lung cancer tissue.

The single-pass transmembrane protein ROS1, discovered in 1980, was associated with malignant cell transformation and progression of lung cancer in 2007 involving ROS1 and ROS1 fusion variants (Fig. 1).<sup>1</sup>

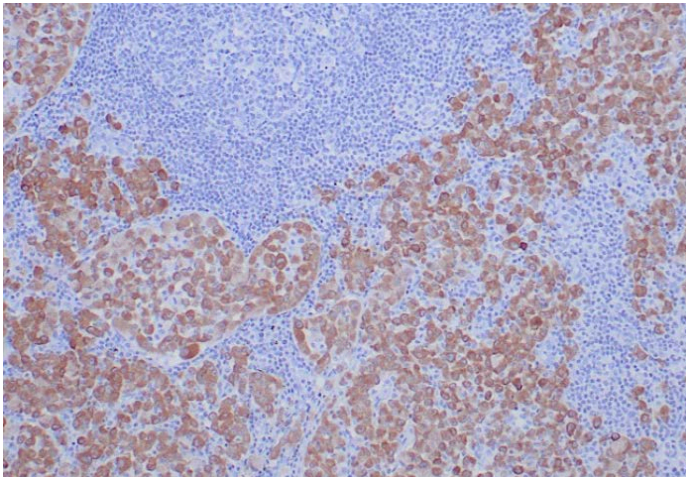


Figure 1: ROS1 Zeta-Antibody ZR400. IHC staining of ROS1 in human lung adenocarcinoma. Image property of Zeta Corporation.

The ROS1 gene rearrangement occurring in 0.9–2.6% of NSCLCs, resulted in ROS1-fusion with CD74 (38–54%), EZR (13%–24%), SDC4 (9–13%), and SLC34A2 (5–10%) as frequently observed in NSCLC.<sup>1,2,3</sup> Moreover, additional fusion partners such as CCCKC6, TFG, SLMAP, MYO5C, FIG, LIMA1, CLTC, GOPC, ZZCCHC8, CEP72, MLL3, KDELR2, LRIG3, MSN, MPRIP, WNK1, SLC6A17, MEM106B, FAM135B, TPM3, and TDP52L1 were identified.<sup>2</sup> A clear prognostic role of each fusion protein remains to be elucidated.<sup>1</sup>

ROS1 fusion variants commonly share the intracellular ROS1 domain (ICD), while the upstream N-terminal ECD of genetic fusion variants differs.<sup>5</sup> Here, the Zeta antibody ROS1 (clone ZR400) maps to the ICD of ROS1, achieving the recognition of a variety of ROS1 fusion variants (Fig. 2).

Besides fluorescence in situ hybridization (FISH) and next-generation sequencing (NGS), immunohistochemistry (IHC) is used as a screening technique for subsequent validation of ROS1 and ROS1-fusion variant protein expression.<sup>6</sup>

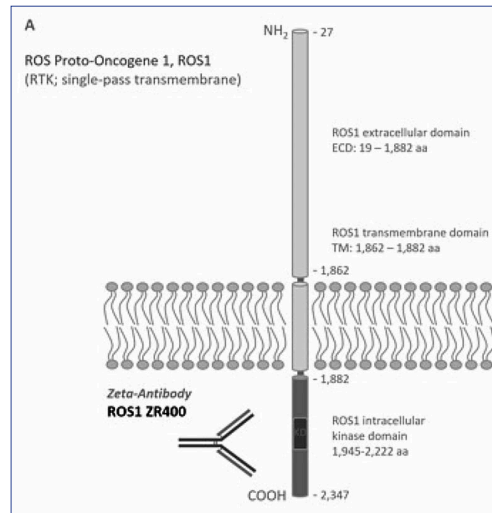
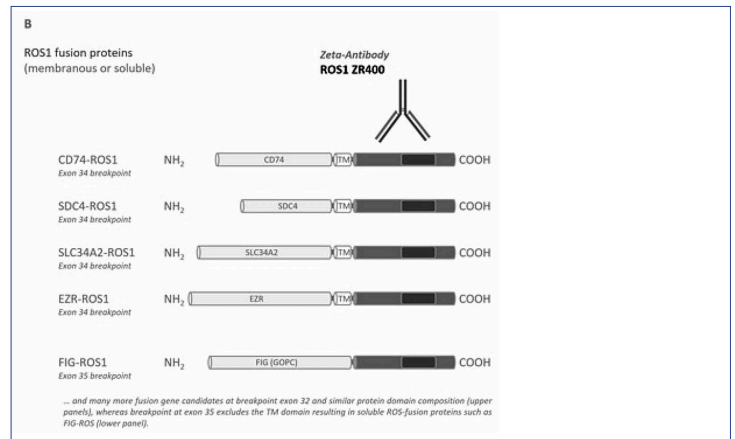


Figure 2: ROS1 Zeta-Antibody ZR400 epitope mapping to ROS1 C-terminus. Antigen recognition by ZR400 illustrated.<sup>5,7</sup> – Illustration courtesy of A. Herrmann.



Thus, by recognizing the functionally critical ICD, the Zeta ROS1 antibody clone ZR400 readily assesses ROS1-fusion variant protein expression in malignant pulmonary lesions as well as other solid malignancies.

## References:

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