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Anti-spike protein [PZZ 21] Ab03630-23.0-BT

This full-length chimeric rabbit antibody was made using the variable domain sequences of the original scFv format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Rabbit IgG, Kappa

Clone Number: PZZ 21

Alternative Name(s) of Target: Spike glycoprotein; S glycoprotein; E2; Peplomer protein

UniProt Accession Number of Target Protein: Q91AV1

Published Application(s): in vivo, neutralizing, ELISA, IF

Published Species Reactivity: Porcine epidemic diarrhea virus

Immunogen: A scFv antibody phage display library was constructed from peripheral blood lymphocytes of piglets induced with PEDV. The library was screened with four rounds of biopanning using purified PEDV antigen, and scFv antibodies that bound to PEDV were obtained.

Specificity: The antibody binds the S1 region of the spike protein of PEDV. The S protein is a type I glycoprotein that plays a crucial role in virus attachment, entry, receptor binding, cell membrane fusion and induction of neutralizing antibodies. The S protein can be cleaved into S1 (residues 1-789) and S2 subunits (residues 790-1386) by host protease. The S1 subunit contains the N-terminal domain (NTD, residues 1-233) that shows sialic acid binding activity and the C-terminal domain (CTD, residues 253-638) that attaches to the cell surface receptor (e.g., aminopeptidase N (APN)). The S2 subunit mediates virus-cell membrane fusion.

Application Notes: The specificity of the original format of the antibody was confirmed by ELISA analysis. Immunofluorescence assay revealed that the scFv stained PEDV-infected Vero E6 cells but did not react with uninfected control cells. The scFv was shown to inhibit PEDV infectivity by the plaque reduction neutralization assay (the virus neutralization titer was 6.25 µg/mL). Results showed the a cocktail of the scFv fragment, PZZ 24 and PZZ 35 neutralized viral infection at 3.125 µg/mL. Finally, piglets orally administered with a mixture of scFv fragment, PZZ 24 and PZZ 35 showed no to mild clinical symptoms, significantly less viral shedding, no mortality and no intestinal lesions.

Antibody First Published in: Zhang et al. Single Chain Fragment Variable (scFv) Antibodies Targeting the Spike Protein of Porcine Epidemic Diarrhea Virus Provide Protection against Viral Infection in Piglets. *Viruses*. 2019 Jan; 11(1): 58. [PMID:30646521](#)

Note on publication: The original paper describes the generation and characterization of the antibody.

Product Form

Size: 1 mg Purified antibody in bulk size.

Purification: Protein A affinity purified

Supplied In: PBS only.

Storage Recommendation: Store at 4°C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommended this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20°C.

Concentration: 1 mg/ml.

Important note – This product is for research use only. It is not intended for use in therapeutic or diagnostic procedures for humans or animals.