

Anti-pre-fusion viral F protein [MPE8] Bulk Size Ab03555-10.0-BT

Isotype and Format: Human IgG1, Kappa

Clone Number: MPE8

Alternative Name(s) of Target: Human respiratory syncytial virus; HRSV; human metapneumovirus; HMPV; Fusion glycoprotein F0; Protein F; PVM; BRSV

UniProt Accession Number of Target Protein: P03420; Q6WB98

Published Application(s): crystallization, in vivo, inhibition, neutralization, SPR, WB, ELISA

Published Species Reactivity: bovine RSV, human metapneumovirus, Human respiratory syncytial virus, pneumonia virus of mice

Immunogen: The original antibody was generated by isolating IgG1 memory B cells of a blood donor with high serum neutralizing antibody titres against HRSV and HMPV.

Specificity: The antibody binds to HRSV, HMPV, bovine RSV (BRSV) and pneumonia virus of mice (PVM). The antibody binds to a highly conserved epitope that is displayed on the surface of the pre-fusion, but not of the post-fusion, HRSV and HMPV F proteins. The epitope is centred around the b2/b7 antiparallel strands and relies on residues T50, D305, G307, I309 and D310, which are highly conserved amongst 551 virus strains, comprising 364 HRSV, 162 HMPV, 8 BRSV and 5 PVM strains.

Application Notes: The antibody neutralized HRSV and HMPV, as well as PVM and BRSV, with IC₅₀ (half-maximum inhibitory concentration) values ranging from 2 to 110 ng/ml. The antibody was also tested for its capacity to prevent cell-to-cell viral spread, showing a 50% spreading inhibiting capacity (IS₅₀). The antibody selectively bound to the pre-fusion F protein, as shown by SPR. The antibody detected HRSV and HMPV F proteins under non-reducing conditions in western blot analysis. Further, the antibody showed prophylactic and therapeutic efficacy in vivo. In the HRSV mouse model, the antibody could reduce HRSV lung titres and was effective at concentrations as low as 0.12 mg per kg of body weight. Similar results were obtained in the HMPV mouse model. The antibody fully protected mice from PVM lethality at 0.12 mg per kg and from body weight loss at 0.6 mg per kg. Moreover, in a therapeutic setting the antibody completely protected from lethality when administered up to 3 days after infection both at 30 and 5 mg per kg and conferred significant protection when given on day 4 or 5 at 30 mg per kg (Corti et al., 2013; PMID: 23955151). The structure of the scFv fragment in complex with the F protein of RSV was solved (Wen et al., 2017; PMID: 28134915). In ELISA analysis, the antibody bound to pre-fusion and uncleaved postfusion F, albeit with lower affinity (Gilman et al., 2015; PMID: 26161532).

Antibody First Published in: Corti et al. Cross-neutralization of four paramyxoviruses by a human monoclonal antibody *Nature*. 2013 Sep 19;501(7467):439-43.

[PMID:23955151](#)

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.