Anti-Sigma1 [5C6] Bulk Size Ab00926-10.3-BT

This antibody was created using our proprietary Fc Silent™ engineered Fc domain containing key point mutations that abrogate binding to Fc gamma receptors.

This chimeric human antibody was made using the variable domain sequences of the original Mouse IgG2a format, for improved compatibility with existing reagents, assays and techniques.

Isotype and Format: Human IgG1, Fc Silent™, Kappa
Clone Number: 5C6
Alternative Name(s) of Target: Outer capsid protein sigma1; sigma1 protein; Reovirus strain T1L sigma 1; strain T1L S1; T1L S1; type 1 haemagglutinin; type 1 HA; T1L HA
UniProt Accession Number of Target Protein: P04506
Published Application(s): crystallisation, IP, NTRL, FC, IF
Published Species Reactivity: Reovirus strain T1L
Immunogen: Murine antibodies were produced by immunising CAF1 mice with reovirus strain T3D, with subsequent immunisation boosts using UV-inactivated strain T1L reovirus. Immunised mice produced antibodies recognising both T3D and T1L. Splenocytes were obtained from immunised mice and fused with the P3Ag8.653 myeloma cell line to generate hybridomas.
Specificity: The structure of 5C6 against Sigma1 was solved crystallographically to 3.7 angstrom resolution (Dietrich et al, 2017). The 5C6 Fab regions each contact the upper part of the Sigma1 'head', which forms a beta-spiral repeat structure. The VH CDRs contact the antigen more extensively than the VL CDRs, resulting in a discontinuous binding interface. Reoviruses bind to cell-surface glycans as coreceptors, and in particular T1L reovirus is known to bind the glycan GM2 to facilitate infectivity (Reiss et al, 2012). The 5C6 binding site on Sigma1 partially overlaps with its GM2 binding site, blocking viral infectivity by sterically inhibiting receptor binding. 5C6 bound Sigma1 with an affinity of 2 nM, shown by SPR. Haemagglutination assays of 5C6 showed activity against reovirus strain T1L, but not strain T3D (Stencel-Baerenwald et al, 2015).
Application Notes: 5C6 was shown recently to block reoviral infection of L929 mouse fibroblasts in a dose-dependent manner, using immunofluorescence staining (Dietrich et al, 2017). Fibroblasts were incubated with virus-antibody mixtures, and immunofluorescence staining of the cells enabled detection of infectivity. 5C6 is highly specific for the T1L reoviral strain, as opposed to the T3D strain which was also tested. 5C6 was also used to immunoprecipitate reoviral particles.
Antibody First Published in: Virgin et al. Monoclonal antibodies to reovirus reveal structure/function

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relationships between capsid proteins and genetics of susceptibility to antibody action. J Virol. 1991 Dec;65(12):6772-81. PMID:1719233

Note on publication: Describes the generation of a panel of anti-reovirus (strain T3D and T1L) mAbs, including clone 5C6, using mouse immunisation and hybridoma generation. mAb specificities were probed using ELISAs and Western blotting.

Product Form

Size: 1 mg Purified antibody in bulk size.
Purification: Protein A affinity purified
Supplied In: PBS only.
Storage Recommendation: Store at 4^{0}C for up to 3 months. Note, this antibody is provided without added preservatives, it is therefore recommed this antibody be handled under sterile conditions. For longer storage, aliquot and store at -20^{0}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.

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