Anti-Z-DNA/Z-RNA [Z22] Bulk Size Ab00783-2.3-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 reformatted mouse antibody was made using the variable domain sequences of the original Mouse IgG2b format for improved compatibility with existing reagents assays and techniques.

Isotype and Format: Mouse IgG2a, Fc Silent™, Kappa
Clone Number: Z22
Alternative Name(s) of Target: Z-22; Z 22; Z DNA; ZDNA; Z RNA; ZRNA; Z NA; Z-NA; ZNA
UniProt Accession Number of Target Protein:
Published Application(s): EMSA, gel retardation assay, in vitro, SPR, WB, ELISA, FC, IF, IHC
Published Species Reactivity: Species independent
Immunogen: Z22 was prepared by immunizing C57BL/6 mice with brominated poly(dG-dC).poly(dG-dC) complexed with methylated bovine serum albumin (BSA), and was selected for by ELISA. Brominated poly(dG-dC).poly(dG-dC) forms a stable Z-DNA helix under physiological salt conditions.
Specificity: Z22 binds both Z-DNA, but not B-DNA or ssDNA (single-stranded DNA). It recognizes Z-DNA at the phosphodiester backbone of various base sequence including (dG-dC)n.(dG-dC)n, (dTdG)n.(dC-dA)n, (dG-dme5C)n.(dG-dme5C)n and (dG-dbr5C)n.(dG-dbr5C)n. In other words, Z22 binds Z-DNA irrespective of sequence. Z22 Also binds DNA-8-MOP aducts and Z-RNA.
Application Notes: Z22 binding to Z-DNA was evaluated by a competitive solid-phase ELISA (Möller et al., 1982; PMID: 7118931). The binding affinity of Z22 Fab version engineered from the original mouse IgG2b format to Z-DNA by SPR was measured to have an apparent KD of ~160 nM and could be competed out by soluble brominated d(G-C)15 but not unmodified d(G-C)15 (B-DNA). Z22 scFv binds to the target with a similar affinity to Z22 Fab. Competitive ELISA was used to determine binding specificity. Gel retardation assays were also used to show Z22 binding to DNA-8-MOP adducts. Biotinylated Z22 was used to determine the distribution of Z-DNA in permeabilized, microbead-encapsulated nuclei after adding radioactive streptavidin, and compared to encapsulated permeabilized nuclei stained with DAPI (Wittig et al., 1989; PMID: 2921282). Z22 was shown to cross-react with Z-RNA (Zarling et al., 1990; PMID: 2153833). Z-RNA binding using this product (Ab00783-3.0) was shown using IF (Zhang et al., 2020; PMID: 32200799), and it was also used in FC (Koehler et al., 2021; PMID: 34192517). Furthermore, this product (Ab00783, unspecified isotype) was also used in IHC and WB (Yau et al., 2021; PMID: 34728780), and Electrophoretic

Mobility Shift Assay (EMSA; gel mobility assay) (Li et al., 2022; PMID: 35744832).
Antibody First Published in: Möller et al. Monoclonal Antibodies Recognize Different Parts of Z-DNA. J Biol Chem. 1982 Oct 25;257(20):12081-5. PMID:7118931
Note on publication: Describes the production of monoclonal antibodies which recognize Z-DNA. Binding specificity and affinity were determined.

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.