

Anti-Z-DNA/Z-RNA [Z22] Standard Size Ab00783-1.1

Isotype and Format: Mouse IgG1, 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 adducts 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 K_D 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: 100 µg Purified antibody.

Purification: Protein A affinity purified

Supplied In: PBS with 0.02% Proclin 300.

Storage Recommendation: Store at 4°C for up to 3 months. 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.