

Anti-i-motif DNA [iMab] Standard Size Ab01462-23.0

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

Isotype and Format: Rabbit IgG, Kappa

Clone Number: iMab

Alternative Name(s) of Target: intercalated motif; i-motif; intercalated DNA motif; I motif; DNA i-motif; human telomere i-motif ; hTelo i-motif; imotif; imotiv; imotive; i-motiv; i-motive

UniProt Accession Number of Target Protein:

Published Application(s): BLI, confocal microscopy, ELISA, IF

Published Species Reactivity: n/a

Immunogen: This antibody fragment was selected via phage display from the Garvan-2 human single-chain variable fragment (scFv) library.

Specificity: This antibody fragment is specific to the DNA i-motif ($K_d = 59$ nM), which is a four-stranded DNA structure potentially involved in DNA regulation and formed in the cytosine-rich regions. iMab antibody structure was shown to be able to recognise various i-motifs (1G22, 1A83, c-MYC; RET, VEGF) located in different regions of DNA (telomeres, centromeres, promoters of proto-oncogenes) which might have distinct nucleotide sequences. At the same time, iMab antibody fragment does not bind to many other structures which are similar to i-motifs, such as different DNA G4 quadruplex forms, dsDNA; hairpin DNA; miRNA or mutant human telomeres without the i-motif (Zeraati et al., 2018). This suggests that iMab is an i-motif structure-specific antibody.

Application Notes: iMab is a highly sensitive and specific antibody fragment directed against DNA i-motifs and it is recommended for the identification of these DNA structures. Its specificity towards various types of the i-motif was confirmed via ELISA and bio-layer interferometry (BLI) which showed that iMab did not bind to any similar structures and molecules (most importantly, it did not bind to various DNA G4 quadruplex forms, such as promoter G4s c-MYC44, BCL245, VEGF, telomeric 2JSM47, 2GKU and aptamer G4 TBA) (Zeraati et al., 2018). iMab was demonstrated to be effective in the immunofluorescence detection of i-motifs in multiple cell lines (MCF7, U2OS and HeLa) simultaneously confirming the presence of i-motif structures in human nuclei and their pH and cell-cycle stage dependence (Zeraati et al., 2018).

Antibody First Published in: Zeraati et al. I-motif DNA structures are formed in the nuclei of human cells. Nat Chem. 2018 Jun;10(6):631-637. doi: 10.1038/s41557-018-0046-3. Epub 2018 Apr 23. PMID:29686376

Note on publication: This article describes the generation and characterisation of the iMab antibody

fragment and its use in the detection of i-motifs in the nuclei of human cells.

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.