PRODUCT SPECIFICATION

STATENS SERUM INSTITUT

HYB 331-01 Anti Double stranded DNA

Mouse monoclonal antibody

Article No.	101115 (0.2 mL), 101116 (1.0 mL)
Product Name	HYB 331-01 Anti Double stranded DNA
Clone	35 I 9 DNA
Subclass	IgG2a / Kappa
Description	**Preparation:** Protein-A purified **Concentration::** 1 mg/mL ± 10%, based on A_{280}. See Certificate of Analysis for details. **Solvent:** PBS, pH 7.2 – 7.4 **Storage:** -18 °C or colder
Antigen	Double stranded DNA.
Immunogen	Not applicable, see below.
Specificity	Primarily double stranded DNA (dsDNA). The minimal size for DNA binding of HYB 331-01 is >16 bases and there is an inverse proportionality between binding and ionic strength (1). Measurements by immuno-CE yielded KD's of 0.71 µM and 0.09 µM, for the interaction of HYB 331-01 with single stranded DNA (ssDNA) and dsDNA, respectively (1). On nitrocellulose-dot blot, HYB 331-01 shows strong reactivity with both ssDNA and dsDNA as well as very weak reactivity with RNA (figure 1).
Epitope Specificity	Not determined.
Reactivity	HYB 331-01 is suitable for visualization of ds DNA by immunocytochemistry and immunohistochemistry (2-5). In mammalian cells, immunofluorescent staining of ds DNA with HYB 331-01 results in homogenous nuclear staining of interphase cells and positive staining of the chromosomal region of mitotic cells (Figure 2). In combination with immune-scanning electron microscopy and immune-transmission electron microscopy, HYB 331-01 is highly suitable for investigation of ultrastructural cell biology (3, 6-8). HYB 331-01 is useful for easy quantification of ds DNA and in vitro cell proliferation by ELISA and has successfully been used for monitoring cytotoxicity in an ELISA-based co-culture angiogenesis assay (3-7). On NC-dot blot HYB 331-01 show strong reactivity with both ssDNA and dsDNA as well as very weak reactivity with RNA (Figure 1).
Culture Medium	Dulbecco's modified Eagle's medium with 10 % fetal calf serum.
Fusion Partner	X63-Ag8.653.
Immunization	A lupus mouse (F1 hybrid of NZB Black and White mice), which develops anti dsDNA antibodies spontaneously, was used as B-cell donor.

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Application

Method	Usability	References
ELISA	yes	2, 9-13
Immunocytochemistry/ Immunohistochemistry	yes	2-5
Immuno-scanning electron microscopy	yes	3
Immuno-transmission electron microscopy	yes	6-8
Immunoblotting	yes	14
Immunofluorescence	yes	3-5

References

1) **Heegaard NH et al.** Immuno-capillary electrophoresis for the characterization of a monoclonal antibody against DNA. J Chromatogr A 744:285-94 (1996).

2) **Friis T et al**. A quantitative ELISA-based co-culture angiogenesis and cell proliferation assay. APMIS 111:658-68 (2003).

3) **Barnes AM et al.** Enterococcus faecalis produces abundant extracellular structures containing DNA in the absence of cell lysis during early biofilm formation. MBio 3:e00193-12 (2012).

4) **Eberhard R et al. Ribosome Synthesis and MAPK** Activity Modulate Ionizing Radiation-Induced Germ Cell Apoptosis in Caenorhabditis elegans. PLoS Genet 9:e1003943 (2013).

5) **Fichtman B et al. Inner**/Outer nuclear membrane fusion in nuclear pore assembly: biochemical demonstration and molecular analysis. Mol Biol Cell 21:4197-211 (2010).

6) **Fujiwara Y et al.** Direct uptake and degradation of DNA by lysosomes. Autophagy 9:1167-71 (2013).

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8) **Gottshall EY et al.** Spatially segregated transcription and translation in cells of the endomembrane-containing bacterium Gemmata obscuriglobus. Proc Natl Acad Sci U S A 111:11067-72 (2014).

9) **Lu LD et al**. Depletion of autoreactive plasma cells and treatment of lupus nephritis in mice using CEP-33779, a novel, orally active, selective inhibitor of JAK2. J Immunol 187:3840-53 (2011).

10) **Friis T, Engel AM, Klein BM, Rygaard J, Houen G** Levamisole inhibits angiogenesis in vitro and tumor growth in vivo. Angiogenesis. 2005; 8(1), 25-34.

11) **Friis T, Hansen AB, Houen G, Engel** A Influence of angiogenesis inhibitors on endothelial cell morphology in vitro. APMIS.2006; 114(3), 211-224.

12) **Sylvest L, Bendiksen CD, Houen G** Phosphatase inhibitors with anti-angiogenic effect in vitro. APMIS.2010; 118, 49-59.

13) **Kjær B, Struve C, Friis T, Engel AM, Beyer NH, Højrup P, Houen G Synthesis** and anti-angiogenic effect of conjugates between serum albumin and non-steroidal anti-inflammatory drugs. Protein Pept Lett. 2010; 17(1), 121-130.

14) Figure 1.

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Conditions

For research use only. Not for use in diagnostic procedures. Not for therapeutic use or applications.

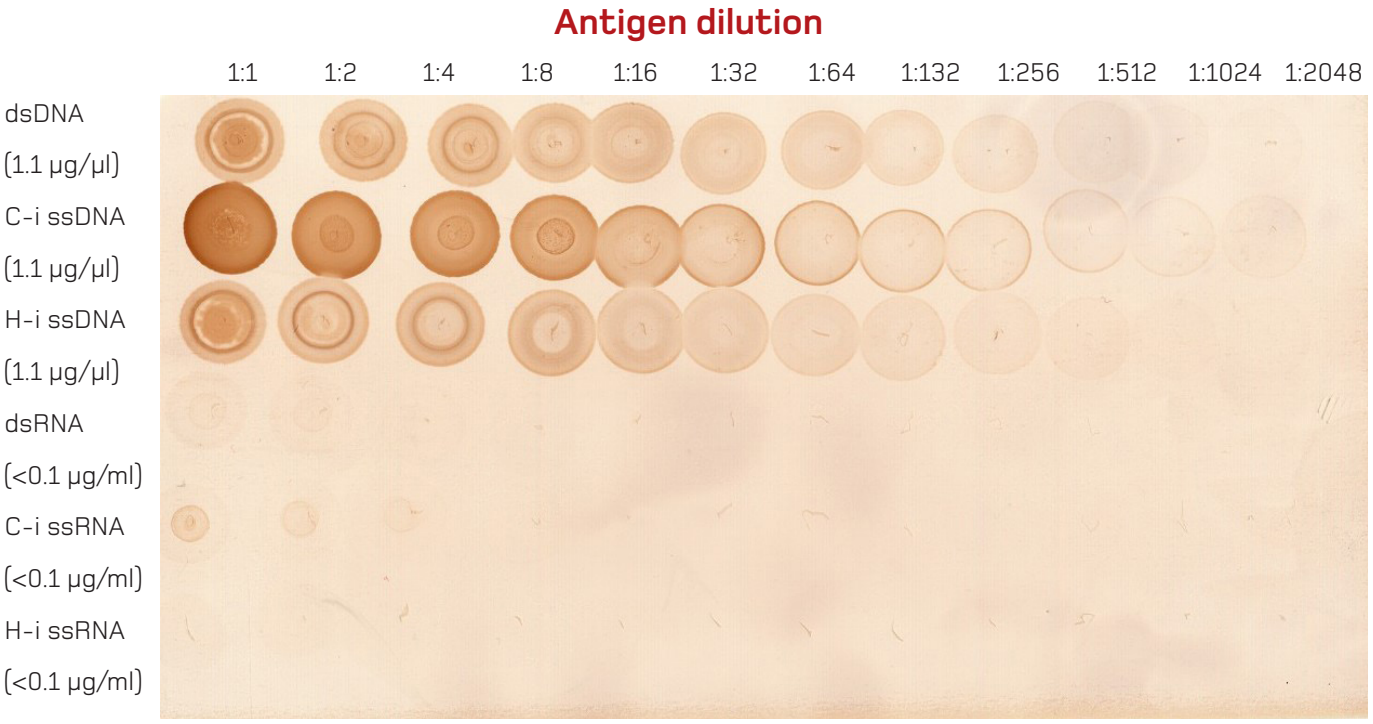

Figure 1:
HYB 331-01 staining of double stranded (ds), chemically induced single stranded (C-i ss) and heat induced single stranded (H-i ss) DNA and RNA on nitrocellulose dot blot.

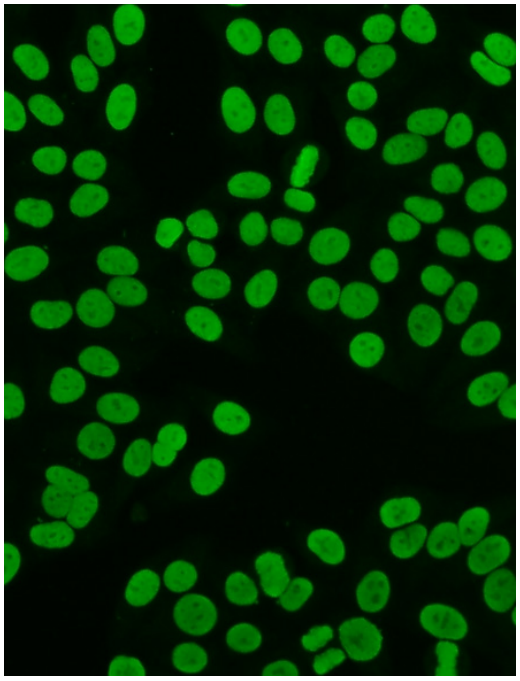

Figure 2:
In the human cell line, Hep-2, immunofluorescent staining of ds DNA with HYB 331-01 results in homogenous nuclear staining of interphase cells and positive staining of the chromosomal region of mitotic cells.