

# High Avidity Double-Stranded DNA (HA dsDNA) Antibody, IgG

*NEW ASSAY FOR THE DETECTION OF HIGH-AVIDITY AUTOANTIBODIES AGAINST DOUBLE-STRANDED DNA (dsDNA)*

## Clinical Background

- Elevated dsDNA antibodies are highly specific for systemic lupus erythematosus (SLE).
- High-avidity dsDNA antibodies are more specific but less sensitive for the diagnosis of SLE compared to intermediate- or low-affinity dsDNA antibodies.
- High-avidity dsDNA antibodies are more closely associated with renal involvement (lupus nephritis) compared to intermediate- or low-affinity dsDNA antibodies.

## Indications for Ordering

- May be clinically useful as a prognostic marker for lupus nephritis in SLE-confirmed patients.
- Due to its increased specificity, it may also be a useful alternative to the subjective *Crithidia luciliae* immunofluorescence test (CLIFT) as a confirmatory test for anti-dsDNA antibodies.

## Interpretation

- High-avidity dsDNA antibodies have a 92.3% positive agreement when compared to specimens that have CLIFT titers of  $\geq 1:320$  and 100% positive agreement when compared with titers of  $\geq 1:640$ .
- High-avidity dsDNA antibodies have 100% clinical specificity when compared to 150 serum specimens from healthy, normal donors.

## Limitations

- This assay, by virtue of its ability to detect only high-avidity dsDNA antibodies, may miss some forms of SLE in which patients have only antibodies of low or intermediate avidity.
- This assay might not be suitable for applications where a total anti-dsDNA antibody measurement is required.

## Methodology

Enzyme-linked immunosorbent assay (ELISA)

## Related Tests

- **0050215** – Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA
- **2002693** – Double-Stranded DNA (*Crithidia luciliae*) Antibody, IgG by IFA
- **2005287** – Chromatin Antibody, IgG
- **0050080** – Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, IgG by IFA
- **0050317** – Anti-Nuclear Antibody (ANA), IgG by ELISA with Reflexes to ANA by IFA and to dsDNA, RNP, Smith, SSA, and SSB Antibodies
- **0050639** – Nuclear Antibody (ANA) by IFA, IgG
- **0050085** – Smith (ENA) Antibody, IgG

## References

1. Suh Lailam B, et al. Evaluation of a high avidity anti-dsDNA IgG enzyme-linked immunosorbent assay for the diagnosis of systemic lupus erythematosus *Int J Clin Exp Pathol.* 2011;4(8):748–754.
2. Riboldi P, et al. Anti-DNA antibodies: a diagnostic and prognostic tool for systemic lupus erythematosus? *Autoimmunity.* 2005;38(1):39–45.
3. Jaekel HP, et al. Anti-dsDNA antibody subtypes and anti-C1q antibodies: toward a more reliable diagnosis and monitoring of systemic lupus erythematosus and lupus nephritis. *Lupus.* 2006;15:1–11.
4. Ghirardello A, et al. Diagnostic accuracy of currently available anti-double-stranded DNA antibody assays. An Italian multicentre study. *Clin Exp Rheumatol.* 2011;29:50–56.

## Test Information

### **2005526 High Avidity Double-Stranded DNA (HA dsDNA) Antibody, IgG**

For specific collection, transport, and testing information, refer to the ARUP website at [www.aruplab.com](http://www.aruplab.com).  
For information on test selection, ordering, and interpretation, refer to ARUP Consult<sup>®</sup> at [www.arupconsult.com](http://www.arupconsult.com).

## AUTHORS

Anne Tebo, PhD, D(ABMLI)

Wayne K. Davis, MBA/HCM, I(ASCP)DLMCM