**HISTONE ANTIGEN**

ATH01-02  Histone antigen  0.20 mg  
ATH01-10  Histone antigen  1.0 mg  

**Description of the Product**

Purified from bovine thymus. After coating onto ELISA plates the product will bind autoantibodies to histone antigen.

**Purity:** The histone antigen is more than 90% pure, as assessed by SDS gel electrophoresis.

**Storage:** Store at -65 °C or below (long term). Avoid repeated freezing and thawing. Mix thoroughly before use.

**Clinical and Biochemical Data**

Autoantibodies against histones (AHAs) are observed in a number of autoimmune diseases. AHA are reported in 50-80% of patients with Systemic Lupus Erythematosus (SLE) being highest in patients with active disease. Although H1 and H2B are the most common epitopes in SLE, many SLE patients have conformation-dependent AHA, directed against the histone complex. AHA have particular clinical significance for drug-induced lupus, particularly in the diagnosis of antinuclear antibody positive patients receiving procainamide, hydralazine and isoniazide. AHA are also prevalent in Felty’s syndrome (83%), rheumatoid arthritis (75%) and juvenile arthritis (50-75%).

Histone amino acid sequences are highly conserved between species, even between animals and plants. Histone antigen in drug-induced lupus, although also observed in SLE, has conformation-dependent AHA, directed against the histone complex.

Histones are small DNA-binding proteins and the major protein component of the nucleosome. The nucleosome consists of 146 base pairs of DNA wrapped around an octomer of core histone proteins composed of a central tetramer of two H3-H4 dimers flanked by two H2A-H2B dimers. Histone H1 is a linker histone, present between each nucleosome, and is responsible for establishing chromatin structure. The molecular weights of the core histones range from 11,000 to 15,000. Histone H1 is larger, with a molecular weight of 23,000. All of the histones contain many basic amino acids, with histones H3 and H4 being arginine rich, while H2A and H2B are slightly lysine-rich.

Histone autoantigens are more than 90% pure, as assessed by SDS gel electrophoresis.

**Methodology**

The following is an ELISA procedure which can be used to detect anti-histone autoantibodies in human serum using the ATH01 purified antigen:

1. Dilute the purified antigen to 1.0-2.0 µg/ml in 50 mM carbonate buffer, pH 9.6 containing 0.5% (w/v) sodium deoxycholate.
2. Coat ELISA plates with 100 µl of diluted antigen per well. Cover and incubate at +4°C overnight.
3. Empty the plates and add 200 µl PBS / 1% BSA / 0.1% Tween 20 per well. Incubate at room temperature for 1 hour.
4. Empty plates and add 200 µl PBS / 0.1% Tween 20 per well. Incubate 5 minutes then empty plates. Repeat this step twice.
7. Apply 100 µl anti-human IgG-enzyme conjugate (horseradish peroxidase or alkaline phosphatase) diluted in PBS / 1% BSA / 0.1% Tween 20 per well and incubate at +4°C overnight.
9. Add enzyme substrate and incubate at room temperature for 1 hour.
10. Read absorbance in an ELISA spectrophotometer.

**References**

7. Wayakau, T. et al. (2007) Rheumatol. Int. 28, 113

**For research use only; not for use in diagnostic procedures.**

**NOTE:** No patented technology has been used by AROTEC during the preparation of this product.