

## Monoclonal antibody against Outer surface protein A (OspA) *Borrelia burgdorferi* [LA31.1] Product No. ADG0083L

### Description

The outer surface Protein A (OspA) of *Borrelia burgdorferi* has been a focus of scientific scrutiny since its identification. This 31-kDa lipoprotein is localized on the surface and in the periplasmic space of *B. burgdorferi*. OspA coats the spirochetes from the time they enter ticks until they are transmitted to a mammal. Vaccination with OspA elicits antibody that can target spirochetes in the tick midgut during feeding and inhibit transmission to mammals. OspA was the primary component of the human LYMERix™ vaccine.

### Properties

The monoclonal antibody ADG0083L (clone LA31.1) is a murine monoclonal antibody, subclass IgG<sub>1</sub> recognizing OspA. Mice were immunized with cell lysates of *Borrelia burgdorferi*. The antibody has been purified from cell culture supernatant using Protein G affinity chromatography.

### Presentation

Vial containing 1 mg purified antibody in PBS pH 7.4. The concentration is given on the vial label. Spin the vial briefly before opening.

### Storage and Stability

Store the antibody at 2°-8°C. For long-term storage the antibody should be aliquoted and stored at -20°C or colder. It is recommended to avoid freeze-thaw cycles.

### Applications

#### A. ELISA

The antibody can be used as capture antibody in ELISAs. An antibody concentration of 1-10 µg/ml is recommended.

#### B. Westernblot

The antibody is suitable for Western blot analysis, detecting native and recombinant OspA following SDS-PAGE under reducing conditions. A primary antibody concentration of 1-10 µg/mL is recommended.

### C. Immunocytochemistry

The antibody can be used for immunocytochemistry on paraformaldehyde fixed spirochetes and for cryo-electron tomography.

### References

1. Cloning and sequencing of the gene encoding the outer surface protein A (OspA) of a European *Borrelia burgdorferi* isolate. Wallich et al. *Nucleic Acids Res.* 1989; 17(21):8864
2. Monoclonal antibodies specific for the Outer surface protein A (OspA) of *Borrelia burgdorferi* prevent Lyme borreliosis in severe combined immunodeficiency (scid) mice. Schaible et al. *Proc. Natl. Acad. Sci. USA* 1990; 87(10):3768-3772
3. Vaccination against Lyme disease with recombinant *Borrelia burgdorferi* outer-surface lipoprotein A with adjuvant. Lyme Disease Vaccine Study Group. Steere et al. *N. Engl. J. Med.* 1998; 339(4):209-215
4. Structural identification of a key protective B-cell epitope in Lyme disease antigen OspA. Ding et al. *J. Mol. Biol.* 2000; 302(5):1153-1164
5. Nanoscopic localization of surface-exposed antigens of *Borrelia burgdorferi*. Lemgruber et al. *Microsc. Microanal.* 2015; 21(03):680-688
6. Comparative cryo-electron tomography of pathogenic Lyme disease spirochetes. Kudryashev et al. *Mol. Microbiol.* 2009; 71(6):1415-1434

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Hinweis/Note:

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