

## Recombinant *Borrelia burgdorferi* sensu stricto (B31) P35 Protein, MBP-tagged

### Product Information

**Cat#**

BOR-035

**Product Name**

Recombinant *Borrelia burgdorferi* sensu stricto (B31) P35 Protein, MBP-tagged

**Description**

Recombinant *Borrelia burgdorferi* P35 protein, fused to an MBP-tag and produced in *E. coli* (>90% purity).

**Type**

Recombinant

**Gene**

P35

**Species**

*Borrelia burgdorferi* sensu stricto (B31)

**Source**

*E. coli*

**Synonyms**

*Borrelia burgdorferi* sensu stricto (B31) P35

**Formulation**

0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 and 0.01% (w/v) Sodium Azide

**Concentration**

1.0 mg/mL by UV absorbance at 280 nm

**Stability**

At +4 centigrade: Not determined.

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At -80 centigrade: Not determined.

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### Purity

>90% by SDS-PAGE

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### Storage

Short Term Storage: +2 centigrade to +8 centigrade

Long Term Storage: -80 centigrade

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### Notes

This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.

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### Tags

MBP

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### Freezing

Can be frozen, but avoid multiple freeze/thaw cycles.

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### Background

P35 protein is produced by the spirochete *B. burgdorferi*, which is carried by Ixodes ticks. Strain B31 is the type strain (ATCC 35210) for this organism and was derived by limited dilutional cloning from the original Lyme-disease tick isolate obtained by A. Barbour (Johnson, et al., 1984). The bba64 gene of *B. burgdorferi* encodes a surface-exposed 35- kDa antigen which has been shown to be a statistically significant marker in IgG immunoblots in a study of patients with early Lyme disease who presented with erythema migrans (Fikrig, et al., 1997). P35 expression is induced in the tick vector during feeding and maintained during infection of the vertebrate host. The expression of a majority of the proteins expressed in early Lyme disease is affected by pH, being abundantly expressed at pH 7.0 (resembling the tick mid-gut pH of 6.8 during feeding) but only sparsely at pH 8.0 (a condition closer to that of the unfed tick mid-gut pH of 7.4) and the encoding genes may be coregulated (Gilmore Jr, et al., 2010). *Borrelia* may also change its antigenic composition in its need for adaptation to stresses

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imposed by changes in conditions from cycling between its arthropod and mammalian hosts (Fikrig, et al., 1997).

The expression of bba64 is down-regulated in the absence of RpoS which has also been shown to be the sole determinant of differential bba64 expression in cultured spirochetes. P35 expression in *B. burgdorferi* is upregulated in the stationary growth phase, and influenced by a temperature of 34 centigrade (but not 24 centigrade) (Gautam, et al., 2008).

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