

# Vaxxon® SRP® Pasteurella

Siderophore Receptors and Porins



## Finally, a vaccine technology which functions **independent of serotype**



**Vaxxon® SRP® Pasteurella is an effective, innovative and safe vaccine against fowl cholera caused by *P. multocida* in chickens. There are no other vaccines like it.**

Unlike other bacterial vaccines, SRP vaccines do not use LPS (lipopolysaccharide, also called endotoxin) as the primary antigen, rather using purified proteins called SRPs. LPS is known to be highly specific to serotype, whereas SRPs are commonly shared among bacteria. In an animal study, SRPs were also shown to create the longest duration of immunity, exceeding all other antigens in survival time.<sup>1</sup>

Features	Benefits
<b>Effective</b>	<ul style="list-style-type: none"><li>• Effective against fowl cholera caused by <i>P. multocida</i><sup>2</sup> Type 1 in USDA challenge model</li><li>• Reduced mortality in affected flocks</li></ul>
<b>Purified SRP® proteins</b>	<ul style="list-style-type: none"><li>• Good immunogen, strong anamnestic response<sup>3,4,5</sup></li><li>• Stimulates humoral and cell-mediated immunity<sup>4,5</sup></li><li>• Common SRPs found across Pasteurella serotypes<sup>6</sup></li></ul>
<b>Minimal LPS</b>	<ul style="list-style-type: none"><li>• Greatly reduced total endotoxin (LPS)</li><li>• Reduced injection site reactions<sup>7</sup></li><li>• Reduced post-vaccination activity suppression</li></ul>
<b>Low volume, proprietary oil-in-water adjuvant</b>	<ul style="list-style-type: none"><li>• Low oil fraction, low viscosity &amp; easy to administer</li><li>• Reduced risk of vaccine reactions</li><li>• Long-lasting SRP antibody titers</li></ul>

**APPROVED  
& SAFE**

**INDEPENDENT  
OF SEROTYPE**

**PURIFIED  
SRP®  
PROTEINS**

# What makes SRP<sup>®</sup> technology unique?

During infection of a host, bacteria require iron to survive. When vaccinating with SRP technology, the immune system creates antibodies which disrupt the SRP function of bacteria by blocking iron absorption, which results in cell death.

## SRPs ARE ESSENTIAL FOR BACTERIAL SURVIVAL<sup>8</sup>

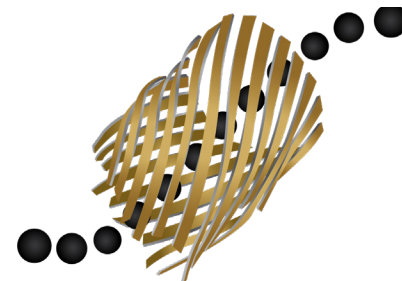
- Iron acquisition in host environment
- Blockage results in bacterial cell death

## SRPs ARE VERY COMMON SUBUNITS OF BACTERIA<sup>8</sup>

- Same SRPs found in multiple strains of same bacteria
- Some found across entirely different bacteria

## SRPs GENERATE STRONG IMMUNE RESPONSE<sup>3,4,5</sup>

- Induce both B-cell and T-cell antibodies
- Create long lasting antibody response



The SRP logo is a scientific rendering of iron passing through the tube-shaped protein called a Siderophore Receptor Protein.

## Safety

The safety of Vaxxon SRP Pasteurella was demonstrated in 59,033 birds during a field safety study.<sup>9</sup> Three different flocks in distinct geographic locations were vaccinated twice with either Vaxxon SRP Pasteurella vaccine or commercial vaccines. There were no adverse events detected following vaccination with Vaxxon SRP Pasteurella.

**Table 1.** Overall mortality during the field safety study observation period, after vaccination with Vaxxon SRP Pasteurella or commercial inactivated bacterin.

Treatment	Number of Birds	Total Mortality	Mortality Rate (%)
Vaxxon SRP Pasteurella	59,033	286	0.48
Controls	56,542	354	0.63

Vaxxon<sup>®</sup> SRP<sup>®</sup> Pasteurella is an effective, innovative and safe vaccine against fowl cholera caused by *P. multocida* Type 1.

<sup>1</sup>Barat, S. et al. Immunity to Intracellular Salmonella depends on surface-associated antigens. PLOS Pathogens. e1002966. October 2012. <sup>2</sup>Data on file. Study No. 1907, July 22, 2019. Vaxxinova US. <sup>3</sup>Antigen properties, types and determinants of antigenicity. <https://microbiologyinfo.com/antigen-properties-types-and-determinants-of-antigenicity/> Accessed 14 April 2020. <sup>4</sup>Meeusen, E.N.T., et al. 2007. Current status of veterinary vaccines. *Clinical Microbiology Reviews*. 20:489-510. <sup>5</sup>Siegrist, C.A. 2013. Vaccine Immunology. In: Vaccines. 6th Ed. S.A. Plotkin, et al., eds. Elsevier Inc., pp. 14-32. <sup>6</sup>Ikeda, J.S. & D.C. Hirsch. 1988. Antigenically related iron-regulated outer membrane proteins produced by different somatic serotypes of *Pasteurella multocida*. *Infection and Immunity*. 56:2499-2502. <sup>7</sup>Data on file. Study No. 1613, November 2020, Vaxxinova US. <sup>8</sup>Nielands, J. B. 1995. Siderophores: structure and function of microbial iron transport compounds. *J of Biological Chemistry*. 270:26723-26726 <sup>9</sup>Data on file. Study No. 1916, November 11, 2020.