

Vaksineutvikling til rensefisk -utfordringer fra felt-



Rensefiskkonferansen

Stord 10.09.20

LIV





Siderophore Receptor and Porin Proteins

The Need for Transitional Metals

All Living organisms including Bacteria require transitional metals to survive



Acquisition of metal ions required for cellular metabolic functions and gene regulation

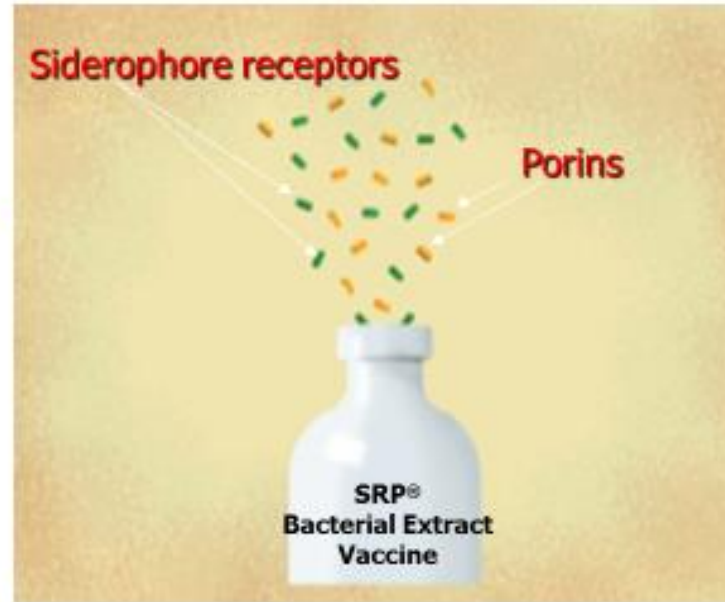
Nutrient limitation by the host and nutrient acquisition by the pathogen are in constant competition

To prevent infection with pathogenic bacteria, all mammals including humans, restrict access to essential metals in a process termed *nutritional immunity* a universal strategy in innate defense

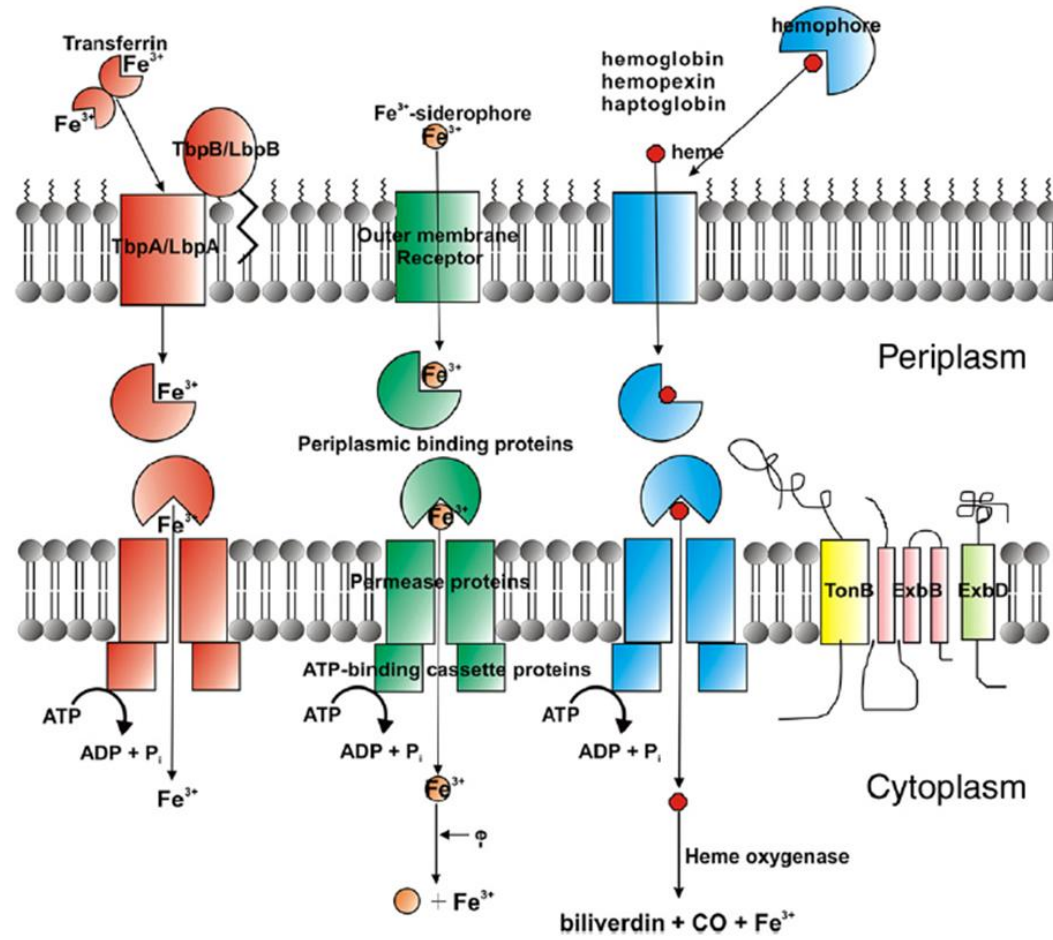


What is SRP[®] Technology?

- **Porins** - Protein pores in the cell wall that allow essential nutrients to enter the cell
- **Siderophore Receptors** - Specialized porin proteins that transport iron-siderophore complexes through the cell wall
- **SRP[®] technology** - Siderophore Receptor and Porin proteins, extracted from the bacterial cell wall and used as vaccine antigens

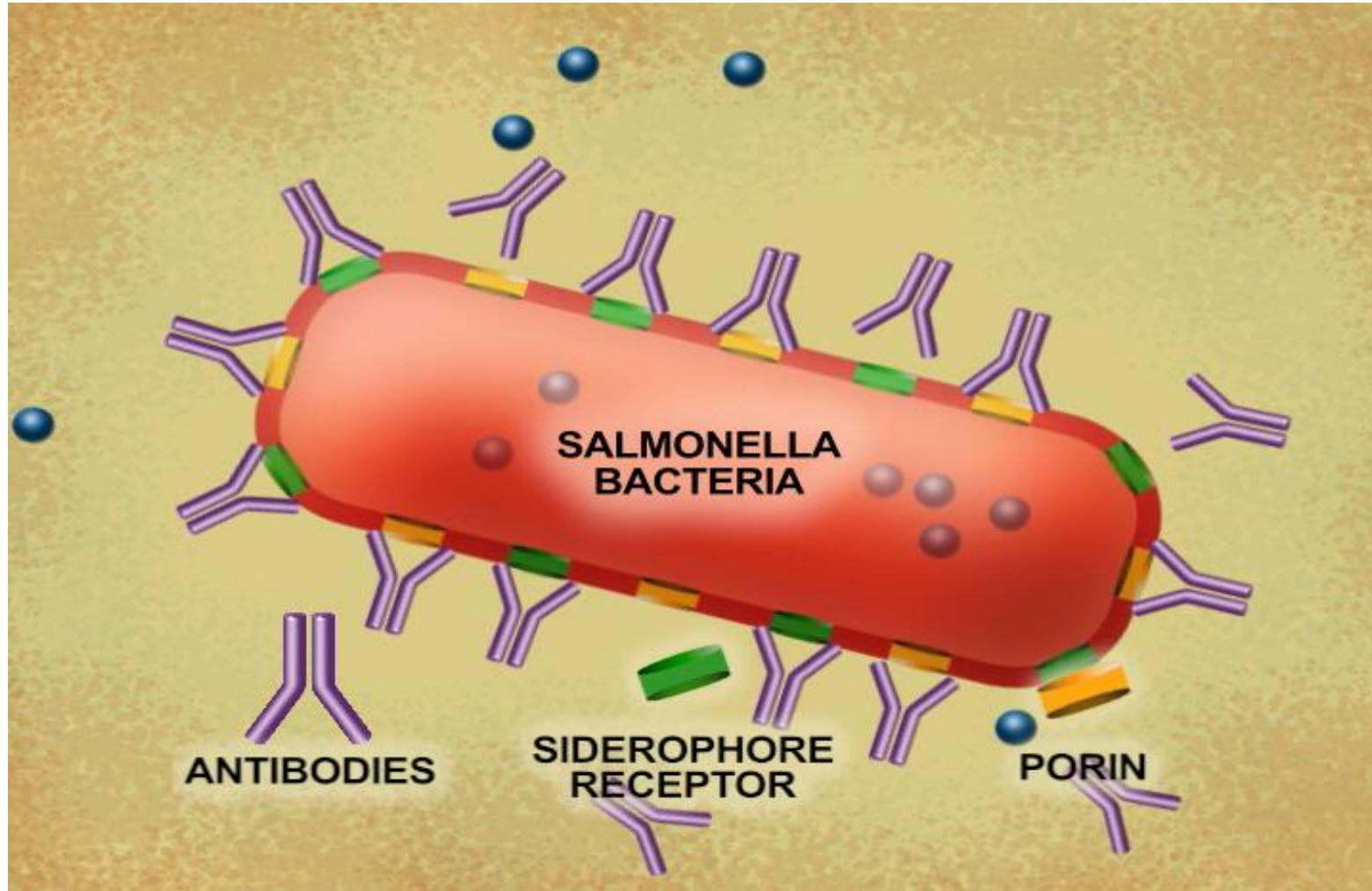


SRP-tekonologi

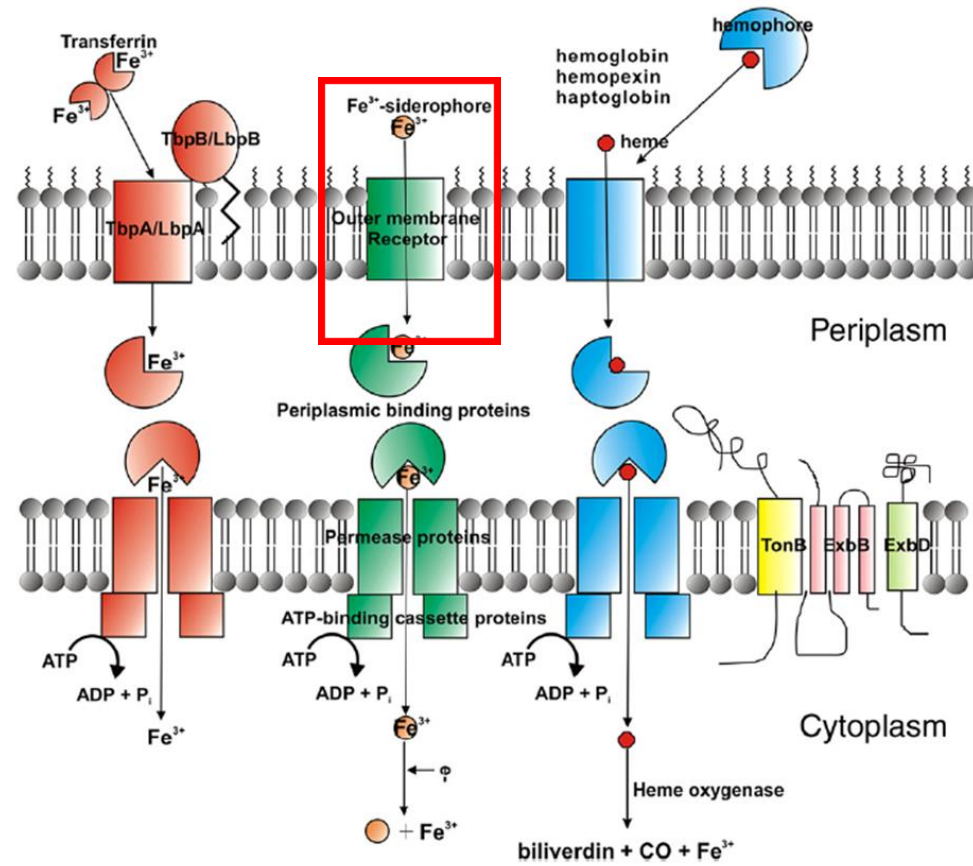


Krewulak KD, 2008, BBA

Immunity to Siderophore Receptor Proteins

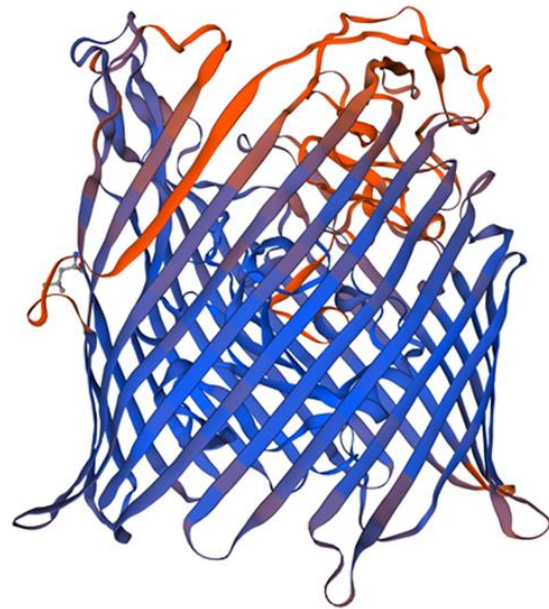


SRP- Konserviert mekanisme

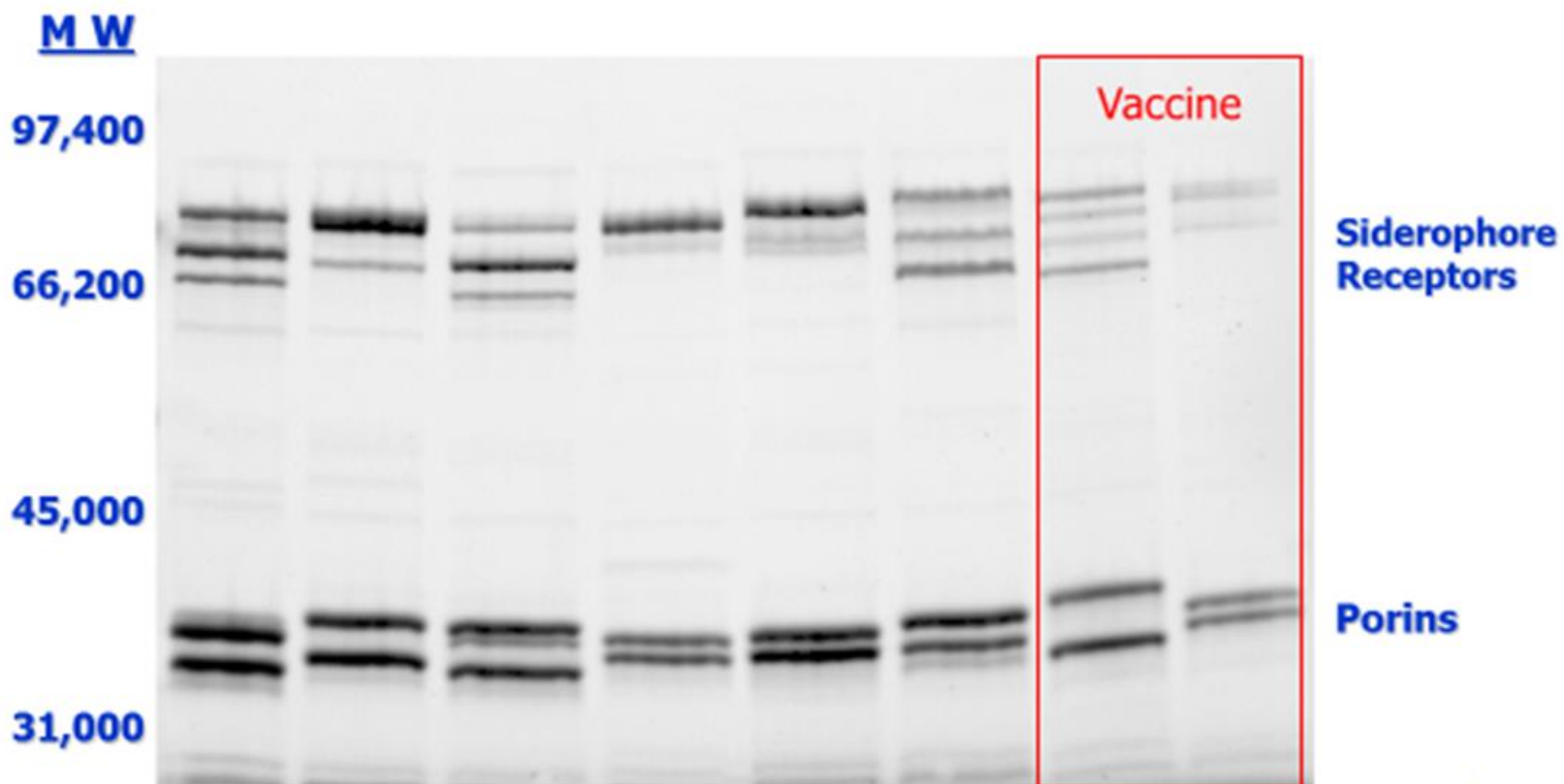


SRP- konservert mekanisme

Modell porin fra atypisk A. salm VI



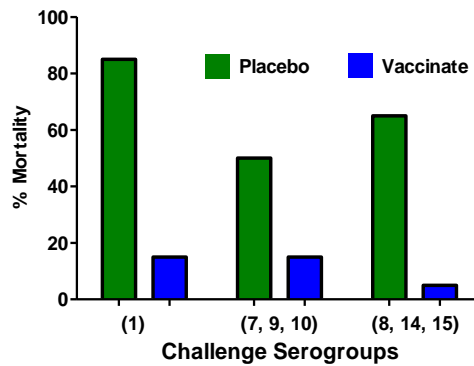
SDS-PAGE: Common *E. coli* (APEC) from Chicken and Turkey



Epitōpix

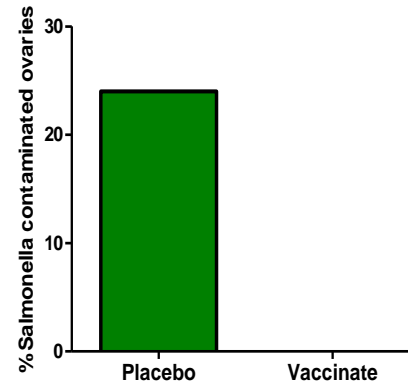
Siderophore Receptor Proteins make excellent Bacterial Vaccine Targets

Cholera in chickens



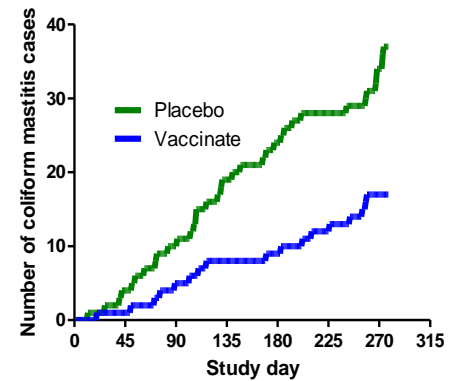
Pasteurella

Reproductive health in chickens



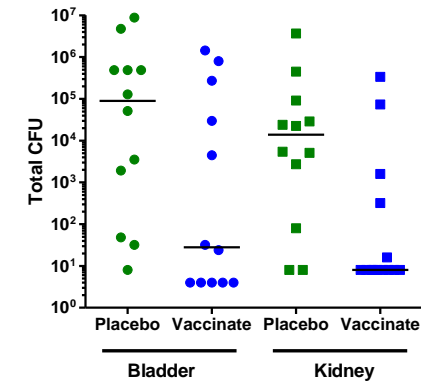
Salmonella

Mastitis in cows



Klebsiella

Urinary tract infection in humans (mouse model)



E. coli

SRP-vaksiner

- Har vist seg å kunne gi like god eller bedre effekt
- Er en svært konserverte mekanisme, har vist seg å gi god kryssbeskyttelse mellom forskjellige varianter av en bakterie
- SRP som inkluderes i vaksinen, tar bort store deler av overflatestrukturene i celleveggen som er svært immunogen, noe som gir mildere vaksinerereaksjoner i forhold til en tradisjonell vaksine

Når?

- Testvaksine klar i løpet av 2021



vaxxinova.no

Vaxxinova Norway AS
Kong Christian Frederiks plass 3
5006 Bergen, Norge
+47 55 900 200
post@vaxxinova.no