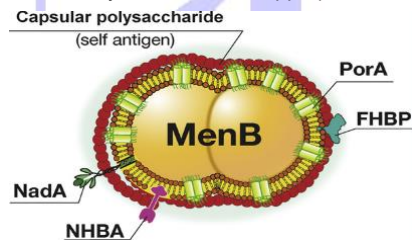


Meningitis/Meningococcal Serogroup B (MenB) Vaccine & ELISA Kits

Meningococcal meningitis, a form of meningococcal disease, which is a serious bacterial infection, is caused by bacteria called *Neisseria meningitidis* also known as meningococcus. It causes meningitis, meningococemia, septicemia, and rarely carditis, septic arthritis, or pneumonia. Unlike viral meningitis, it can potentially kill an otherwise healthy young person within a few days after the first symptoms appear. Meningitis is inflammation of the protective membranes covering the brain and spinal cord, known collectively as the meninges. *N. meningitidis* colonizes the mucosa of the nasopharynx in 5 to 10% of the population, and in susceptible individuals the bacterium can cross the epithelial layer into the bloodstream, causing septicemia and/or meningitis. Meningitis is life-threatening because of the inflammation's proximity to the brain and spinal cord; therefore the condition is classified as a medical emergency. *Neisseria meningitidis* has 13 clinically significant serogroups classified according to the antigenic structure of their polysaccharide capsule. Six serogroups, **A, B, C, Y, W135 and X** are responsible for virtually all cases of the disease in humans.

The distribution of the serogroups varies globally; large epidemics in Africa have been generally associated with serogroup A. **Serogroup B**, which are generally absent in sub-Saharan Africa, are the primary concern in **industrialized countries**. MenB, a leading cause of bacterial meningitis in industrialized countries, remains as an important unmet public health challenge. Europe, US, Canada and Australia experience the highest rates of meningococcal disease caused by serogroup B. Global incidence of MenB infection is estimated to be between 20,000 and 80,000 cases per year, with a 10% fatality rate even with appropriate treatment.



The capsular polysaccharide of MenB is a self-antigen that cannot be used to make a vaccine as it is not well recognized by the immune system as an antigen and therefore does not induce an immune response.

Outer membrane proteins have been used as antigens for vaccines against MenB in the past. However, these proteins vary greatly by strain and they are observed to be strain specific.

The **Men B vaccine** contains 4 antigens that were prioritized based on their ability to induce broad protection. The proteins that met these criteria were called **Genome-derived Neisseria Antigens**: GNA2132 (Neisserial Heparin Binding Antigen, or **NHBA**), GNA1870 (factor H binding protein, or **fHbp**) and GNA1994 (Neisseria adhesin A or **NadA**). Two additional antigens, GNA2091 and GNA1030, were also selected because they induced protective immunity but only in some of the assays. The antigens were combined in a **multi component vaccine** with the aim of inducing better and broader protection. Fusion proteins were generated in order to facilitate large-scale manufacturing of the vaccine.

Bexsero® a four-component vaccine (called **4CMenB**) is the first broadly effective **MenB vaccine** for all age groups, including infants who are among the most vulnerable. This vaccine prevents disease caused by serogroup B. **FHbp** (282 aa protein, ~28 kDa) binds human factor H, enhancing the ability of the bacterium to resist complement-mediated killing.



NadA (362a.a) is an adhesin which exhibits homology with a family of proteins involved in invasion and pathogenesis. **NHBA, 427 a.a, 43.3 kDa** NHBA (or GNA2132, 427 a.a) is a surface-exposed lipoprotein which binds heparin in vitro through an arginine-rich region. **Porin A (PorA, 36.4 kDa)** is the most abundant antigen which is variable and induces only strain-specific protection. Por A determines the serosubtype of Neisseria meningitidis, and is the main antigen of a candidate vaccine against serogroup B meningococci, which has been shown to induce high-avidity antibodies in children.

About ADI Men-B vaccine LISA Kits-ADI has produced recombinant proteins that are used in Men-B, made antibodies, and developed antibody ELISA kits. The ELISA kits can be used to assess immune status of humans and animals and to assess vaccine efficacy or formulate new Vaccines. Antibody ELISA kits for species and isotypes not listed here can be made available as well.

List of Meningitis ELISA Kits available from ADI.

Product details, data sheets, and pricing available (http://4adi.com/commerce/catalog/spcategory.jsp?category_id=2797)

Vaccines	Target Antigens	ELISA Type	Ab Type	Human	Mouse	Rabbit
Meningitis B Antibody ELISA kits	NadA	Ab	IgG	600-900-HNG	600-905-MNG	600-960-RNG
	fHbp		IgG	600-910-HFG	600-915-MFG	600-965-RFG
	NHBA		IgG	600-920-HHG	600-925-MHG	600-970-RHG
	PorA		IgG	600-930-HPG	600-935-MPG	600-975-RPG
	PorA+ NADA+fHbp+NHBA		IgG	600-950-H4G	600-955-M4G	600-980-R4G

Men-B Recombinant Proteins and Antibodies

MBFH11-HNC	Human MenB fHbp antibody negative control serum	MBNH31-HNC	Human MenB NHBA antibody negative control serum
MBFH11-HPC	Human MenB fHbp antibody positive control serum	MBNH31-HPC	Human MenB NHBA antibody positive control serum
MBFH11-S	Rabbit Anti-MenB fHbp protein antiserum	MBNH31-S	Rabbit Anti-MenB NHBA antiserum
MBFH15-R-10	Recomb. (E.coli) MenB fHbp (hig tag, 35 kDa >95%)	MBNH35-R-10	Recomb. (E.coli) MenB NHBA (his tag, 43 kDa.)
MBNA21-HNC	Human MenB Nad A antibody negative control serum	MBPA41-HNC	Human MenB PorA antibody negative control serum
MBNA21-HPC	Human MenB Nad A antibody positive control serum	MBPA41-HPC	Human MenB PorA antibody positive control serum
MBNA21-S	Rabbit Anti- MenB Nad A antiserum	MBPA41-S	Rabbit Anti- MenB PorA antiserum
MBNA25-R-10	Recomb. (E.coli) MenB NadA protein (his tag, 36 kDa)	MBPA45-R-10	Recomb. (E.coli) Purified MenB PorA (his tag, 36kDa)

Meningitis-B_Vaccine_ELISA-Flr 160608A

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