

Product Specification Sheet

Meningococcal Group ACYW Oligosaccharides-Diphtheria CRM197 conjugate

– Cat # MENA35-N-100 Mening. Group ACYW Oligosaccharides-Diphtheria CRM197 conjugate control for ELISA SIZE: 100 ul



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. It can potentially kill an otherwise healthy young person within a few days after the first symptoms appear. *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 capsular polysaccharide of Men B is a self antigen that cannot be used to make a vaccine. The antigens selected by reverse vaccinology were prioritized based on their ability to induce broad protection. The proteins that met these criteria were called **Genome-derived Neisseria Antigens**. The most abundant antigen is **Porin A (PorA)** determines the serosubtype which is variable and induces only strain-specific protection. Less abundant but more conserved antigens are **fHbp (factor H-binding protein)** **NadA (Neisseria adhesin A)** and **NHBA (Neisseria heparin-binding antigen)**.



Meningococcal vaccine is a vaccine used against *Meningococcus*, a bacterium that causes meningitis. *Neisseria meningitidis* has 13 clinically significant serogroups. Six serogroups, A, B, C, Y, W135 and X are responsible for virtually all cases of the disease in humans. There are several vaccines available, quadrivalent (A, C, W, Y) or bivalent (C, Y, combination with Hib). Meningococcal vaccines are either conjugated or non-conjugated (see table below). The duration of immunity mediated by non-conjugated vaccines is three years or less, whereas conjugated vaccines provide enhanced protection, and effective herd immunity.

| Vaccine | Manuf. | Active Vaccine Ingredients | Conjugating proteins |
|-------------------|----------|--------------------------------------------------|------------------------|
| Menactra (MC4) | Sanofi | Meningococcal A, C, Y, and W-135 polysaccharides | Diphtheria Toxoid (DT) |
| Menveo | Novartis | Meningococcal A, C, Y, and W-135 polysaccharides | DT mutant CRM197 |
| NmVac4 | JNI | Meningococcal A, C, Y, and W-135 polysaccharides | Diphtheria Toxoid (DT) |
| MenHibrix | GSK | Meningococcal C and Y/Hib-PRP polysaccharides | Tetanus Toxoid (TT) |
| Menomune (MPSV-4) | Sanofi | Meningococcal A, C, Y, and W-135 polysaccharides | None |
| Mencevax | GSK | Meningococcal A, C, Y, and W-135 polysaccharides | None |



Meningitis immunogenic polysaccharides (Blue color; A, C, W, and Y) are used as vaccine (non-conjugated vaccine such as Menomune or conjugated with Diphtheria Toxoid (DT) or its mutant CRM197 or Tetanus Toxoid (TT)). Antibodies are produced to both the Meningitis polysaccharides (A, C, W, Y) and the conjugating proteins (DT/CRM197/TT). ADI offers ELISA kits to detect antibodies (IgG) to the meningitis polysaccharides (A, C, W, and Y individually or mix) and the conjugating proteins (DT/CRM197/TT). Efficacy of the vaccines can be established by measuring antibody titers to the individual A, C, W, and Y active vaccine components and also to the carrier proteins. ADI also has developed antigen ELISA kits to measure individual or mix vaccine components (A, C, W, Y).

Source of Antigen

N. meningitidis serogroup A oligosaccharides were purified, inactivated with formaldehyde, and conjugated to *Corynebacterium diphtheriae* CRM197 protein using proprietary methods. The concentration of Men A oligosaccharides in the conjugate is ~5-10 ug/ml. It is supplied in PBS, pH 7.4 and 0.08% azide as preservative. Store liquid at -20oC and avoid repeated freeze and thaw.

The product is suitable for ELISA for detecting antibodies. Other applications not tested. Not intended for use in humans or animals as vaccine.

Stability: 6-12 months at -20oC or below.
Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

ELISA (50-100 ng antigen/well).

References: Riedo FX (1995) *Pediatr. Infect. Dis. J.* 14 (8): 643–57; Trotter CL (2004) *Lancet* 364 (9431): 365–7; Andreoni J (1993) *J. Infect. Dis.* 168 (1): 227–31; Centers for Disease Control and Prevention (June 2000). "Prevention and Control of Meningococcal Disease. Recommendations of the Advisory Committee on Immunization Practices (ACIP)". *MMWR Recomm Rep* 49 (RR-7): 1–10; Reddy JR (2008) *West African Journal of Medicine* *This product is for In vitro research use only.

Related material available from ADI

| Catalog# | ProdDescription |
|--------------|-----------------------------------------------------------------------------------------|
| MENA11-S | Anti-Meningococcal Group A Oligosaccharides-Diphtheria CRM197 conjugate antiserum |
| MENA12-S | Anti-Meningococcal Group CWY Oligosaccharides-Diphtheria CRM197 conjugate antiserum |
| MENA13-S | Anti-Meningococcal Group ACWY Oligosaccharides-Diphtheria CRM197 conjugate antiserum |
| MENA14-BT | Anti-Meningococcal Group ABC serotypes antigens IgG-biotin conjugate |
| MENA14-F | Anti-Meningococcal Group ABC serotypes antigens IgG-FITC conjugate |
| MENA14-HP | Anti-Meningococcal Group ABC serotypes antigens IgG-HRP conjugate |
| MENA14-UL | Anti-Meningococcal Group ABC serotypes antigens IgG, Unlabeled |
| MENA35-N-100 | Meningococcal Group A Oligosaccharides-Diphtheria CRM197 conjugate control for ELISA |
| MENA25-N-100 | Meningococcal Group CWY Oligosaccharides-Diphtheria CRM197 conjugate control for ELISA |
| MENA35-N-100 | Meningococcal Group ACWY Oligosaccharides-Diphtheria CRM197 conjugate control for ELISA |
| 600-800-AHG | Human Anti-Meningococcal Oligosaccharides IgG ELISA Kit, 96 tests, Quantitative |
| 600-820-AHG | Human Anti-Meningococcal Oligosaccharides IgG ELISA Kit, 96 tests, Quantitative |
| 600-840-AHG | Human Anti-Meningococcal Oligosaccharides IgG ELISA Kit, 96 tests, Quantitative |
| 600-860-AHG | Human Anti-Meningococcal Oligosaccharides IgG ELISA Kit, 96 tests, Quantitative |
| 600-880-XHG | Human Anti-Meningococcal Oligosaccharides IgG (Combo) ELISA Kit, 96 tests, Quantitative |

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