Product Information Sheet for NR-48830

Aedes aegypti, Strain Puerto Rico, Eggs

Catalog No. NR-48830

For research use only. Not for human use.

Contributor:

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Manufacturer:

Centers for Disease Control and Prevention (CDC), Atlanta, Georgia, USA

Product Description:

Classification: *Culicidae*, *Aedes*
Species: *Aedes aegypti* (common name: yellow fever mosquito)
Strain: Puerto Rico (PR)
Original Source: *Aedes aegypti* (*A. aegypti*), strain PR, eggs were field collected in San Juan, Puerto Rico and shipped to USDA-ARS-CMAVE in Gainesville, Florida, USA where they were hatched and reared in laboratory conditions.[1]
Genotype: Sequencing of genomic DNA from F1 and F2 individuals identified knockdown resistance (KDR).[1]
Phenotype: *A. aegypti*, strain PR is pyrethroid resistant.[1]
Transmission Competent Pathogens: Untested; may be competent for dengue fever and yellow fever viruses
Comment: The *A. aegypti* PR colony was at F7 at the time of deposit in July 2014.[1]

Material Provided:

NR-48830 contains a suitable number of live eggs to establish a stock. Eggs are provided on damp filter paper and should be hatched immediately upon receipt.

Packaging/Storage:

NR-48830 is prepared and shipped by CDC. The product is provided at room temperature.

Growth Conditions[1]:

A. aegypti, strain PR mosquitoes should be maintained in an insectary at 25°C-28°C and 70%-80% relative humidity under a 14-hour light:10-hour dark cycle (lights on at 8 a.m.). Eggs should be hatched in deoxygenated, deionized water containing powdered TetraMin tropical fish food (Tetra, Melle, Germany). Larvae should be cultured in deionized water and fed TetraMin tablets. Adults are fed through unlimited access to 10% sucrose solution. Human or mouse blood-feeding is used to induce egg production. Adults are housed in a 28 × 28 × 28 cm screened cage (BioQuip® Products, Rancho Dominguez, California, USA).

Maintenance of Pyrethroid Resistance:

F3 generation was pressured with permethrin (0.1 mg/mL) as fourth instars. Every third generation, 3rd instar larva are exposed en masse to permethrin (0.1 mg/mL) for 40 to 60 minutes. Exposure is stopped when approximately half the larva sink to the bottom. Larva are rinsed several times and then returned to a rearing tray. The goal is to maintain consistent resistance rather than drive increasing resistance. Aim for 70% mortality after recovery (varies between 60%-80%). Resistance ratios were confirmed from F6 eggs to be about 100-fold. Topical application bioassays showed pyrethroid resistance at 85- to 100-fold higher than a pyrethroid-susceptible *A. aegypti* strain. Pyrethroid resistance was also confirmed with alpha-cypermethrin and etofenprox.

Citation:

Acknowledgment for publications should read "The following reagent was provided by Centers for Disease Control and Prevention for distribution by BEI Resources, NIAID, NIH: *Aedes aegypti*, Strain Puerto Rico, Eggs, NR-48830."

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. Clark, G. G. and J. J. Becnel, Personal Communication.

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