Product Information Sheet for NR-50135

Streptococcus pyogenes, Strain H293 (Genotype *emm*89)

Catalog No. NR-50135

For research use only. Not for human use.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Bacteria Classification: *Streptococcaceae, Streptococcus*
Species: *Streptococcus pyogenes*
Strain: H293
Serotype: M89
Original Source: *Streptococcus pyogenes* (*S. pyogenes*), strain H293, genotype *emm*89, was isolated in 1995 from the muscle of a patient with necrotizing fasciitis in England.[1]
Comments: *S. pyogenes*, strain H293 was deposited as being encapsulated and a low producer of NADase and streptolysin-O (SLO) toxins.[1] The complete genome of *S. pyogenes*, strain H293 is available (GenBank: HG316453).

S. pyogenes is a non-motile, non-sporulating, Gram-positive, β-hemolytic coccus found in normal human nasopharyngeal flora and is one of the most frequent pathogens of humans. It is estimated that between 5-15% of normal individuals harbor *S. pyogenes* without signs of disease. Mild infections may present as pharyngitis (strep throat), scarlet fever (rash), impetigo (superficial skin) or cellulitis (deep skin). Invasive, toxigenic infections can result in necrotizing fasciitis, myositis and streptococcal toxic shock syndrome.[2-6]

Group A *Streptococcus* (GAS) is often associated with the emergence and expansion of the *emm* genotype. The evolution of this genotype may be due to the transfer of virulence factors between strains via bacteriophages or other mobile elements. *emm*89 is among the top 5 *emm* types capable of causing invasive and noninvasive disease.[7]

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-50135 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:
Tryptic Soy broth or Todd-Hewitt broth or equivalent
Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or Todd-Hewitt agar or equivalent
Incubation:
Temperature: 37°C
Atmosphere: Aerobic with 5% CO_2
Propagation:
1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 1 day.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Streptococcus pyogenes*, Strain H293 (Genotype *emm*89), NR-50135."

Biosafety Level: 2

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. Sriskandan, S., Personal Communication.
2. Beres, S. B., et al. "Genome-Wide Molecular Dissection of Serotype M3 Group A *Streptococcus* Strains Causing Two Epidemics of Invasive Infections." Proc. Natl. Acad. Sci. USA 101 (2004): 11833-11838. PubMed: 15282372.
3. Beres, S. B., et al. "Molecular Genetic Anatomy of Inter- and Intraserotype Variation in the Human Bacterial Pathogen Group A *Streptococcus*." Proc. Natl. Acad. Sci. USA 103 (2006): 7059-7064. PubMed: 16636287.
4. Beres, S. B., et al. "Genome Sequence of a Serotype M3 Strain of Group A *Streptococcus*: Phage-Encoded Toxins, the High-Virulence Phenotype, and Clone Emergence." Proc. Natl. Acad. Sci. USA 99 (2002): 10078-10083. PubMed: 12122206.
5. Davies, H. D., et al. "Invasive Group A Streptococcal Infections in Ontario, Canada. Ontario Group A Streptococcal Study Group." N. Engl. J. Med. 335 (1996): 547-554. PubMed: 8684408.
6. Olsen, R. J. and J. M. Musser. "Molecular Pathogenesis of Necrotizing Fasciitis." Annu. Rev. Pathol. 5 (2010): 1-31. PubMed: 19737105.
7. Turner, C. E., et al. "Emergence of a New Highly Successful Acapsular Group A *Streptococcus* Clade of Genotype *emm*89 in the United Kingdom." mBio 6 (2015): e00622. PubMed: 26173696.

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