

# ***Streptococcus agalactiae*, Strain FSL S3-586**

**Catalog No. NR-30580**

**For research use only. Not for human use.**

## **Contributor:**

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## **Manufacturer:**

BEI Resources

## **Product Description:**

**Bacteria Classification:** *Streptococcaceae*, *Streptococcus*

**Species:** *Streptococcus agalactiae* (also referred to as *Streptococcus diffcile*)<sup>1</sup>

**Serogroup:** Group B<sup>2</sup>

**Strain:** FSL S3-586

**Original Source:** *Streptococcus agalactiae* (*S. agalactiae*), strain FSL S3-586 was isolated in March 2001 from a quarter milk sample collected from a dairy cow with mastitis in Wayne County, New York, USA.<sup>2,3</sup>

**Comment:** *S. agalactiae*, strain FSL S3-586 was isolated by Dr. Martin Wiedmann, Food Safety Laboratory, Cornell University. Strain FSL S3-586 was deposited as serotype II, ribotype 116-611-S-7, hyl type 5.3 and containing *sodA* allele 4, and is part of a genome sequencing project at the J. Craig Venter Institute's [Genomic Sequencing Center for Infectious Diseases](#) (GSCID).<sup>2,4</sup> The complete genome of *S. agalactiae*, strain FSL S3-586 has been sequenced (GenBank: [ANCM00000000](#)).

*S. agalactiae* is a Gram-positive cocci characterized by the presence of Group B Lancefield antigen, and is known as Group B *Streptococcus* (GBS). In addition to the presence of the Group B Lancefield antigen, GBS is also characterized by its ability to hydrolyze sodium hippurate and sensitivity to bile. *S. agalactiae*'s polysaccharide antiphagocytic capsule is its main virulence factor.<sup>5</sup> Genomes from multiple serotypes have been sequenced for comparative analyses.<sup>6</sup>

GBS causes illness in people of all ages. In newborns, GBS most commonly causes sepsis (infection of the blood), pneumonia (infection in the lungs), and sometimes meningitis (infection of the fluid and lining around the brain). The most common problems caused by GBS in adults are bloodstream infections, pneumonia, skin and soft-tissue infections, and bone and joint infections. In dairy cattle, GBS is a major cause of bovine mastitis. Ribotype diversity and molecular subtyping studies have shown that *S. agalactiae* isolates from human and bovine hosts represent largely separate populations, although cattle and asymptomatic humans in close proximity can carry indistinguishable subtypes.<sup>7,8</sup> Experimental inoculation studies have shown that human *S. agalactiae* isolates can infect and cause clinical mastitis in dairy cattle.<sup>7</sup> In addition to humans and cattle, *S. agalactiae* has also been isolated from a wide range of other animals

including rodents, cats, dogs, elephants, dolphins, amphibians, reptiles and fish.<sup>3,9</sup>

## **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-30580 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<sub>2</sub>

### **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 24 hours.

**Note:** *Streptococcus* species are generally fast growers. To avoid overgrowth of the culture, incubation without shaking is recommended for growth in broth.

## **Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Streptococcus agalactiae*, Strain FSL S3-586, NR-30580."

## **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](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

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### References:

1. Kawamura, Y., et al. "High Genetic Similarity of *Streptococcus agalactiae* and *Streptococcus diffcilis*: *S. diffcilis* Eldar et al. 1995 is a Later Synonym of *S. agalactiae* Lehmann and Neumann 1896 (Approved Lists 1980)." *Int. J. Syst. Evol. Microbiol.* 55 (2005): 961-965. PubMed: 15774692.
2. Stanhope, M. J., Personal Communication.
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4. Stanhope, M. J. "Evolutionary Genomics and Population Genetics of Pathogenic Streptococci." J. Craig Venter Institute's [Genomic Sequencing Center for Infectious Diseases](http://gsc.jcvi.org/docs/GSC_Streptococcus.pdf). (2009) <[http://gsc.jcvi.org/docs/GSC\\_Streptococcus.pdf](http://gsc.jcvi.org/docs/GSC_Streptococcus.pdf)>
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6. Tettelin, H., et al. "Genome Analysis of Multiple Pathogenic Isolates of *Streptococcus agalactiae*: Implications for Microbial "Pan-Genome"." *Proc. Natl. Acad. Sci. USA* 102 (2005): 13950-13955. PubMed: 16172379.
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8. Sukhnanand, S., et al. "Molecular Subtyping and Characterization of Bovine and Human *Streptococcus agalactiae* Isolates." *J. Clin. Microbiol.* 43 (2005): 1177-1186. PubMed: 15750080.
9. Richard, V. P., et al. "Comparative Genomics and the Role of Lateral Gene Transfer in the Evolution of Bovine Adapted *Streptococcus agalactiae*." *Infect. Genet. Evol.* 11 (2011): 1263-1275. PubMed: 21536150.

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