



DNA-TECHNOLOGY

INFECTIONS

Streptococcus agalactiae

**REAL-TIME PCR
DETECTION KIT**

What is *Streptococcus agalactiae*?

It is a facultative-anaerobic Gram-positive bacterium that belongs to the genus *Streptococcus*, group B of Lancefield classification of streptococci, family *Streptococcaceae*.



How is *S. agalactiae* transmitted?

These bacteria are a normal part of the human body's microbiota. In most cases, they do not cause any health problems. However, in newborns, *S. agalactiae* is a frequent reason of early neonatal infections and can cause severe diseases. In pregnant women *S. agalactiae* can cause septic infections by entering the uterine cavity, amniotic fluid, uterine incisions after cesarean section or the urinary tract.

Often newborns become infected with group B streptococcus (GBS) during the labor [1]. GBS is diagnosed in 15-40% of pregnant women.



**Risk factors
combined with GBS
in newborns**



Sepsis
Meningitis
Pneumonia
Osteomyelitis
Arthritis
Pyelonephritis



**Risk factors
combined with GBS
in pregnant women**



Preterm childbirth
**Spontaneous
abortions**
**Premature release
of amniotic fluid**
Early neonatal sepsis
**Urinary tract
infections**
**Chorioamnionitis
during labor**
**Postpartum
endometritis**



When should testing for colonization with GBS be administered?

Given the high probability of a newborn infection and the risk of postpartum complications in a mother, the CDC (Center for Diseases Control) recommends that pregnant women should be screened for *S. agalactiae* colonization at 35-37 weeks of gestation and, if risk factors are present, at any other time of pregnancy [2, 6].

Newborns from the risk group for GBS infection (even without clinical signs of infection) are also indicated for routine examination of mucous membranes for GBS colonization during the first 24 hours of life [3].

What diagnostic method to choose?

Real-time PCR is an optimal solution for screening of pregnant women and newborns for *S. agalactiae* carriage and for the GBS infection. The real-time PCR method has high sensitivity, specificity and speed of obtaining test results [1, 4].

A medical examination for the presence of *Streptococcus agalactiae* in the reproductive tract of a woman helps to prevent infection of infants during labor and the development of severe newborn's diseases caused by GBS.

Biomaterial for analysis with the *Streptococcus agalactiae* kit:

- human biological samples:
 - blood
 - phlegm
 - urine
 - scrapes from respiratory tract, urogenital and gastrointestinal tracts
 - faeces or meconium
 - bioptates
 - cerebrospinal fluid
- washings from catheters and endotracheal tubes
- bacterial cultures

Registration and interpretation of the reaction results are carried out automatically using the Real-Time PCR software for Real-time PCR instruments of the «DT» series manufactured by «DNA-Technology».

Streptococcus agalactiae

Date:
Tube number:
Patient:
Sex:
Age:
Physician:
Comment:
Sample ID:



Information about laboratory

Name of research	Result
Streptococcus agalactiae	DETECTED

Study was carried out by

Date
Signature

Streptococcus agalactiae

Date:
Tube number:
Patient:
Sex:
Age:
Physician:
Comment:
Sample ID:



Information about laboratory

Name of research	Result
Streptococcus agalactiae	Not detected

Study was carried out by

Date
Signature

Clinical Recommendations

According to ACOG recommendations, all pregnant women should undergo antepartum screening for GBS at 36 0/7–37 6/7 weeks of gestation. The exception is in cases of indicated intrapartum antibiotic prophylaxis for GBS because of GBS bacteriuria during the pregnancy or because of a history of a previous GBS-infected newborn. All women with positive results should receive appropriate intrapartum antibiotic prophylaxis unless a prelabor cesarean birth is performed in the setting of intact membranes [2].

Reference

1. Zatsiorskaya S. L. et al. Diagnostics and prevention of infections caused by *Streptococcus agalactiae* in pregnant women and newborn infants // *Pediatrician (St. Petersburg)*. – 2014. – T. 5. – №. 3. – C. 33-36. (In Russian) DOI: <https://doi.org/10.17816/PED5333-36>
2. American College of Obstetricians and Gynecologists et al. ACOG Committee Opinion No. 797: Prevention of group B streptococcal early-onset disease in newborns // *Obstetrics & Gynecology*. – 2020. – T. 135. – C. e51-e72.
3. Melkumyan A.R., Priputnevich T.V., Kochetova A.G. et al. Microbiological diagnosis of infections caused by streptococcus group B in pregnant women and newborns. [Mikrobiologicheskaya diagnostika infekcij, vyzvannyh streptokokkom gruppy B u beremennyh i novorozhdennyh]. *Laboratornaya sluzhba*. 2017;6(2):54–75. (In Russ.). <https://doi.org/10.17116/labs20176254-75>.
4. Convert M. et al. Comparison of LightCycler PCR and culture for detection of group B streptococci from vaginal swabs // *Clinical microbiology and infection*. – 2005. – T. 11. – №. 12. – C. 1022-1026.
5. Hanh T. Q. et al. Prevalence and capsular type distribution of group B *Streptococcus* isolated from vagina of pregnant women in Nghe An province, Vietnam // *Iranian journal of microbiology*. – 2020. – T. 12. – №. 1. – C.
6. Puopolo K. M., Benitz W. E., Zaoutis T. E. AAP Committee On Fetus And Newborn, AAP Committee On Infectious Diseases (2018) Management of neonates born at ≥ 35 0/7 weeks' gestation with suspected or proven early-onset bacterial sepsis // *Pediatrics*. – T. 142. – C. e20182894.



www.dna-technology.com



hotline@dna-technology.ru



+7 (495) 640-17-71



8 800 200-75-15



e125-1 2023.10.25