

Skin and Soft Tissue Infections (SSTI)

Test 366 Skin & Soft Tissue Infections (SSTI) Panel by Real-Time PCR

- *Aspergillus fumigatus*
- *Bacteroides fragilis*
- *Enterococcus faecalis*
- *Escherichia coli*
- *Fusobacterium* species
- Group A Streptococcus
- Group B Streptococcus
- *Klebsiella oxytoca*
- *Klebsiella pneumoniae*
- Prevotella Groups 1 & 2
- *Proteus mirabilis*
- *Pseudomonas aeruginosa*
- *Staphylococcus aureus*
- Methicillin resistant *Staphylococcus aureus* (MRSA)
- Community Associated MRSA (CA-MRSA)

Test 367 SSTI Panel Antibiotic Resistance

[*Enterococcus faecalis*, *Escherichia coli*, Group A Streptococcus, Group B Streptococcus, *K. oxytoca*, *K. pneumoniae*, *Proteus mirabilis*, *Pseudomonas aeruginosa*, Community Associated MRSA (CA-MRSA)]

- Amoxicillin-clavulanic acid
- Ampicillin (for *E. faecalis*)
- Cephalothin (cephalexin)
- Clindamycin
- Doxycycline
- Trimethoprim-sulfamethoxazole
- Ciprofloxacin
- Cefepime
- Piperacillin-tazobactam
- Imipenem
- Gentamicin

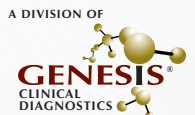
Advantages:

- Real-Time PCR
- Simple and convenient sample collection
- No refrigeration is required before or after collection
- Specimen stable for up to five (5) days after collection
- Test additions are available up to 30 days after collection
- High diagnostic specificity and sensitivity
- One vial, multiple pathogens



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553 ***Aspergillus fumigatus* by Real-Time PCR**

Clinical significance: *Aspergillus fumigatus* is a species of fungus. Cutaneous aspergillosis usually involves sites of skin injury such intravenous access catheter sites and at sites associated with trauma, occlusive dressings, burns, or surgery and occasionally, outbreaks of are due to contaminated biomedical equipment. Skin changes are most commonly a consequence of widespread infection with aspergillus in patients with impaired immunity. Lesions include single or multiple red or violet hardened plaques or papules that evolve into pus- or blood-filled blisters which eventually become necrotic blackened ulcers or scabs. Primary cutaneous aspergillosis most commonly develops at the site of an intravenous cannula insertion or venipuncture (wound from a blood test). Lesions initially appear similar to cellulitis, then develop into a necrotic ulcer or scab.

125 ***Bacteroides fragilis* by Real-Time PCR**

Clinical significance: Bacteroides are Gram-negative, anaerobic bacilli associated with a number of different types of infections that are typically polymicrobial in nature. Anatomic sites affected include the central nervous system, head, neck, chest, abdomen, pelvis, skin and soft tissue. Due to their fastidious growth requirements, *Bacteroides* species are extremely hard to identify by culturing methodologies and, as a result, are believed to be under reported pathogenic agents. *B. fragilis* is considered normal flora of the gastrointestinal tract and is commonly associated with SSI of the abdomen and abscesses.

141 ***Escherichia coli* by Real-Time PCR**

Clinical significance: *E. coli* are Gram-negative, facultative, rod-shaped bacteria that naturally inhabit the gastrointestinal tract. Outside their normal environment, *E. coli* can cause infection, particularly within the urinary tract. They are also associated with skin infections in regions in close proximity to the rectum, particularly with incontinent individuals. Individuals undergoing surgical procedures associated with the gastrointestinal tract and lower regions of the spine are also at risk of contracting infection.

368 ***Fusobacterium* species by Real-Time PCR**

Clinical significance: *Fusobacterium* species are obligate anaerobic, Gram-negative, rod-shaped bacteria found in the microflora of mucosal membranes. They are found as normal flora of the oropharyngeal, gastrointestinal, and genitourinary tracts of healthy humans. After trauma of the mucosal layer or a weakness in the host mucosal barrier due to preceding illness, these bacteria can enter the underlying tissue and cause an infection and potentially infect the bloodstream causing systemic infection. *Fusobacterium* species are commonly associated with topical skin ulcers. Transmission can occur from human-to-human or animal-to-humans and infection is frequently associated with dog bites.

727 ***Klebsiella oxytoca* by Real-Time PCR**

Clinical significance: *Klebsiella oxytoca* is primarily a health care-associated pathogen acquired from environmental sources. *K. oxytoca* is emerging as an important bacterial isolate causing hospital-acquired infection in adults, most often involving immunocompromised patients or those requiring intensive care, and having multiple drug resistance to commonly used antibiotics. They may cause infection of the skin, blood, respiratory, urinary, and gastrointestinal tracts.

728 ***Klebsiella pneumoniae* by Real-Time PCR**

Clinical significance: *Klebsiella pneumoniae* is an important bacterial isolate causing hospital-acquired infection in adults, most often involving immunocompromised patients or those requiring intensive care, and having multiple drug resistance to commonly used antibiotics. It can cause different types of healthcare-associated infections, including pneumonia, bloodstream infections, wound or surgical site infections, and meningitis. *Klebsiella* bacteria can be spread through person-to-person contact, such as from patient to patient via the contaminated hands of healthcare personnel or, less commonly, by contamination of the environment.

362 ***Prevotella* species Group 1 (*P. bivia*, *P. disiens*, *P. intermedia*, *P. melaninogenica*) by Real-Time PCR**

363 ***Prevotella* species Group 2 (*P. corporis*, *P. albensis*) by Real-Time PCR**

Clinical significance: *Prevotella* species are Gram-negative, anaerobic bacilli that colonize the vaginal and oral cavities. Depending on their anatomic location, these bacteria cause a wide-range of infections. Oral cavity colonization is associated with sinus and periodontal infections peritonsillar abscess and pneumonia, while those colonizing the GI tract have been isolated from cases of peritonitis, intra-abdominal abscess, postoperative wound infections, pelvic inflammatory disease, vulvovaginal and perianal infections. Infections of the soft tissue include gangrene and necrotizing fasciitis.

146 ***Proteus mirabilis* by Real-Time PCR**

Clinical significance: *Proteus* species are a Gram-negative, facultative bacilli that colonize the gastrointestinal tract and are a source of nosocomial infection within hospitals and long-term care facilities. Usually associated with UTIs, *Proteus mirabilis* has also been isolated from abscesses, SSI, decubitus ulcers and burns.

174 ***Pseudomonas aeruginosa* by Real-Time PCR**

Clinical significance: *Pseudomonas aeruginosa* is a Gram-negative bacillus associated with a number of different opportunistic infections and is particularly problematic for ventilated patients, burn patients and those with chronic debilities. Infections of the skin include those affecting the feet and toenails (tinea), hot tub/swimming pool infections (folliculitis) and burn wound sepsis. Recently, the ability of *P. aeruginosa* to form bio-films has been postulated as a mechanism for long standing wounds that will not heal.

1112 ***Streptococcus pyogenes* (GAS) by Real-Time PCR**

Clinical significance: GAS is a Gram-negative, coccus that resides harmlessly on the skin as a commensal until the protective skin barrier is breached and it becomes pathogenic. GAS is a causative factor, along with *Staphylococcus aureus*, for impetigo. While impetigo itself is not life-threatening, it can lead to more serious complications, including cellulitis and MRSA affecting the skin and poststreptococcal glomerulonephritis affecting the kidney.

127 **Group B Strep (GBS) by Real-Time PCR**

Clinical significance: GBS, *Streptococcus agalactiae*, is a Gram-positive coccus that causes a number of serious infections in both pregnant women and adults with underlying health issues, like diabetes mellitus, heart disease and malignancy. Aside from its role in neonatal sepsis, GBS has been associated with infections within the over-seventy years of age group, particularly the bedridden and those afflicted with congestive heart failure, where UTI, pneumonia and soft tissue infections are the most frequent manifestations. Streptococci, along with Staphylococci, are the leading causative agents associated with the potentially life-threatening skin infection, cellulitis.

1118 ***Staphylococcus aureus* with methicillin resistance (MRSA) by Conventional PCR**

Clinical significance: *Staphylococcus aureus* is a Gram-positive coccus that is largely considered to be normal flora of the skin. However, upon breach of this protective barrier, Staph can become highly pathogenic, particularly within individuals having chronic disorders such as diabetes, cancer, vascular and lung disease, eczema and individuals with weakened immune systems. Infections of the skin often go untreated as initial infections resemble pimples or spider bites, allowing the infection to progress to greater degrees of severity. Infections are further complicated by the emergence and circulation of methicillin-resistant strains.