Gastrointestinal (GI) Pathogen Panel PCR (GPP PCR)

Assay Summary

Orderable Name: For clients using Cerner or Lifepoint: GI Pathogen Panel, GPP PCR or GPPanel; All other clients: write GPP PCR or GP Panel on the requisition.

Specimen Requirements: Raw soft stool in sterile cup; Raw soft stool in Cary Blair transport media. Formed stool is unacceptable. Ship specimen refrigerated or if greater than 24 hours ship frozen on dry ice. Stable refrigerated up to 24 hours. Freeze after 24 hrs.

Performing Laboratory: IUHPL Molecular Pathology

Performance Schedule: M-F, Days, TAT 24-72 hours

CPT Code: 87507x1

Reference Range: Qualitative results (Detected/Not Detected) for: Campylobacter, Clostridium difficile, Cryptosporidium, Escherichia coli (E. coli) O157, Enterotoxigenic E. coli (ETEC) LT/ST, Giardia, Norovirus GI/GII, Rotavirus A, Salmonella, Shiga-like Toxin producing E. coli (STEC) stx 1/stx 2, and Shigella

Clinical Information: 2 billion cases of diarrheal disease kill 1.8 million people every year. Diarrhea is the second leading cause of death and the leading cause of malnutrition in children under 5 years old. This imparts a high degree of morbidity and mortality in certain populations. Due to similar symptoms, it is difficult to differentiate among viral, bacterial and parasitic agents. Approximately 80% of all cases of food borne illness currently go unidentified, often resulting in inappropriate use of antibiotics. The diagnostic process can be quite complicated.

In 2010 the US associated cost for the 237,000+ patients suffering from gastrointestinal infections was over $6 billion; the cost to the hospital is on average $7,812 per patient. Patients with GI infections can occupy a bed for approximately 5 days. The cause of 80% of diarrhea in the US is never identified. Infection is the cause of approximately 20% of all diarrhea therefore faster identification of infection can improve patient care, reduce hospital-associated costs and more quickly treat patient.

Clinical Utility: The GPP PCR is the first FDA cleared diagnostic to offer detection of 11 major GI pathogens and rule out over 90% of agents that cause diarrhea in a single test. The method screens for bacteria, viruses and parasites in one test, in one lab location with much faster turn around time.

Testing should be performed on individuals exhibiting signs and symptoms of gastrointestinal infection and to aid in the diagnosis of gastrointestinal infection when used in conjunction with clinical evaluation, laboratory findings, and epidemiological information. A gastrointestinal microorganism multiplex nucleic acid-based assay also aids in the detection and identification of acute gastroenteritis in the context of outbreaks. This test is not recommended for in-patients hospitalized for more than 3 days.

Method: The Gastrointestinal Pathogen Panel (GPP) is a multiplexed nucleic acid test intended for the simultaneous qualitative detection and identification of multiple viral, parasitic, and bacterial nucleic acids from stool specimens from individuals with signs and symptoms of infectious colitis or gastroenteritis. The following pathogen types, subtypes and toxin genes are identified using this assay: Campylobacter (C. jejuni, C. coli and C. lari only), Clostridium difficile (C. difficile) toxin A/B, Cryptosporidium (C. parvum and C. hominis only), Escherichia coli (E. coli) O157, Enterotoxigenic E. coli (ETEC) LT/ST, Giardia (G. lamblia only, also known as G. intestinalis and G. duodenalis), Norovirus GI/GII, Rotavirus A, Salmonella, Shiga-like Toxin producing E. coli (STEC) stx 1/stx 2, and Shigella (S. boydii, S. sonnei, S. flexneri and S. dysenteriae), Entamoeba histolytica, Adenovirus, Vibrio cholera.

References:
1) Luminex xTAG GPP Gastrointestinal Pathogen Panel