



Multiplex Detection of Gastrointestinal Pathogens: A Comparative Evaluation of Two Commercial Panels Using Clinical Specimens.

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This study compared the performance of the FilmArray® Gastrointestinal (GI) Panel and the Luminex GPP to that of routine testing using clinical stool samples.

The study included prospective samples (230) and previously characterized samples (270). Among the 230 prospective samples, routine testing was positive for one or more GI pathogens in 19 (8.3%) samples, compared to 69 (30.0%) by the Luminex assay, and 76 (33.0%) by the FilmArray® GI Panel. The 270 previously characterized samples included 243 positive samples and 27 negative samples. For positive samples, the majority of targets on the FilmArray® GI Panel and the Luminex assay showed percent sensitivities of >90%.

This evaluation demonstrated that multiplex GI panels yield an increased percent positive rate compared to routine testing (28% and 20% for the FilmArray® GI Panel and the Luminex assay, respectively, after exclusion of false positive results). This study found that a high percentage of stool samples were positive for two or more pathogens. The FilmArray® GI Panel identified mixed infections in 27% (86/318) samples, compared to 14% (44/312) for the Luminex GPP and 8.3% (19 samples) for routine testing. These results indicate that the presence of multiple pathogens in diarrheal stool samples may be underestimated by current routine tests.

“The ability to cover for a broad spectrum of GI pathogens in a single test is an appealing advantage of multiplex technology.”

KEY POINTS

- Multiplex GI panels yielded an increased percent positive rate compared to routine testing.
- The presence of multiple pathogens in diarrheal stool samples may be underestimated by current routine tests.
- The detection of common viral causes of GI diseases may help reduce the use of antibiotic therapy.