On Board with fCAL® turbo at Cumberland Infirmary

UR user report

Pamela Bowe, Team Manager in the Department of Biochemistry at the Cumberland Infirmary tells us about her experience introducing the BÜHLMANN fCAL® turbo faecal calprotectin assay into her laboratory.

Faecal Calprotectin is used in the differential diagnosis of inflammatory bowel disease (IBD) or irritable bowel syndrome (IBS), as well for monitoring disease activity in IBD. Since NICE recommended its use in 2013 (Diagnostic Guideline 11) there has been a large increase in demand for this test.

We have been analysing faecal samples for calprotectin in-house since 2012. Originally our workload was approximately 40 samples per month but by 2016 this had increased five-fold to more than 200 samples each month.

In order to cope with the increasing workload our method of calprotectin testing has evolved over time. Initially we started with the single use Quantum Blue® cassettes and readers. In 2015 we progressed to the BÜHLMANN fCAL® ELISA which was semi-automated using a Dynex DS2 supplied by Alpha Laboratories. Then, in November 2016 we advanced to automating the BÜHLMANN fCAL® turbo, particle enhanced turbidimetric immunoassay (PETIA), on our Roche cobas® 6000 line using the c501 module. Samples were extracted using the BÜHLMANN CALEX® extraction device, prior to analysis using both the ELISA and PETIA methods.

Comparison of patient calprotectin results between the PETIA and ELISA assays was good: fCAL™ turbo = 1.14 DS2 - 23. R2 = 0.97. n = 58.

Precision was excellent:
intra-assay CV 3.1% and 1.3% at concentrations of 48 µg/g and 247 µg/g respectively; inter assay CV was 3.3% at 73 µg/g and 1.1% at 247 µg/g.

We are running high on EQA at concentrations >100µg/g (when compared against the ALTM); in the absence of a commutable reference standard it is hard to know which method is correct.

We have been confident enough in the results to move from running the assay in duplicate on the DS2, to running in singleton on the cobas.

We now report results up to 1800 µg/g which is the linear range of the PETIA assay without dilution compared to 600 µg/g for the ELISA. The stated on-board stability of the assay is 60 days, but we get 215 tests out of each reagent pack and with our throughput, reagents are never on that long.

The faecal extracts are loaded directly onto the cobas 6000 in the bar-coded CALEX extraction devices. This is one of our main analysers and I was sceptical of running faecal extracts. However, additional wash steps have been included. We run them in batches to ensure there is no cross-contamination.

Pamela Bowe loads BÜHLMANN fCAL® turbo faecal calprotectin tests onto the Roche cobas® 6000 c501 analyser

By consolidating this assay onto our main platform we have saved a significant amount of staff time and removed the potential for transcription errors (the DS2 was not interfaced). It has also freed up bench space as the DS2 has been returned.

The assay parameters were easy to install once Roche opened a third party channel. We have been happy with the stability and performance of the BÜHLMANN fCAL turbo assay over the last couple of months.

To find out more about the BÜHLMANN fCAL turbo high throughput faecal calprotectin assay for clinical analysers please circle **4** on the reply card or visit **www.alphalabs.co.uk/fcalturbo**

BÜHLMANN Quantum Blue® fCAL ▶ BÜHLMANN fCAL® ELISA ▶ BÜHLMANN fCAL® turbo