A validated study protocol to compare microbiome and mycobiome profiles of Inflammatory Bowel Disease patients in remission and active flare

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Abstract
Several large cohort studies of the gut functional composition of patients with Inflammatory Bowel Disease (IBD) have been published in recent years. While these studies have provided key insights into the disease and progression for treatment options, they are often challenged by the lack of replication and complete nutation. Lack of data is largely attributed to donor management of self-sampling, with some studies acting as a barrier to validation with others. OMNIgene®•GUT is the next generation of collection device designed to be an easy-to-use, robust, convenient and cost-effective manner for the self-collection of feces for donors experiencing active IBD and donors experiencing clinical remission. This study aimed to evaluate the performance of OMNIgene•GUT in preserving DNA through active IBD to remission through storage at room temperature.

Methods and results
OMNIgene®•GUT was validated for its performance in self-collection by the Canadian cohort of the ILIBI (Inflammatory Bowel Disease in Children) study, founded in 2008, with a collection period ending in February 2017. OMNIgene®•GUT was validated against traditional one-time liquid nitrogen storage (LNS) and stool self-sampling with transport in tubes containing stabilizer solution (STL). DNA concentration and integrity were determined using the Quant-iT™ PicoGreen™ dsDNA Reagent (Invitrogen) and the Agilent 2100 Bioanalyzer (Agilent Technologies). Comparisons were made between samples stored at room temperature (RT) and LNS, with a secondary analysis comparing number of samples successfully collected and processed between the non-IBD remission and active IBD cohort.

Results
OMNIgene•GUT was shown to be statistically and biologically comparable to LNS in terms of DNA concentration and integrity. OMNIgene•GUT was statistically comparable to traditional stool self-sampling with transport in tubes containing stabilizer solution (STL) in terms of DNA concentration and integrity. OMNIgene•GUT was also statistically comparable to traditional stool self-sampling with transport in tubes containing stabilizer solution (STL) in terms of the number of samples successfully collected and processed.

Conclusion
OMNIgene•GUT meets the criteria to be considered an easy-to-use, robust, convenient and cost-effective manner for the self-collection of feces for donors experiencing active IBD and donors experiencing clinical remission.

References