Determination of Short Chain Fatty Acids in Human Feces by Direct Inject GC/MS
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**Purpose**
To develop a rapid and effective analytical method for the analysis of short chain fatty acids (acetic, butyric, and propionic) in human feces.

**Methods**
Human feces samples from 20 individuals were homogenized. Aliquots of the mixture were weighed and prepared by a simple extraction in a 50:50 water:methanol solution. Gas chromatography was performed on an Agilent 6890 using a NukolTM capillary column coupled to an Agilent 5973 MS. The transfer line was set to 300 °C and the quadrupole and ion source were set to 150 and 230 °C respectively. The analytes were detected in Electron Impact mode scanning from m/z of 20-200. GC/MS peaks were identified using a spectral library search and quantitated by XIC using appropriate internal standards.

**Results**
Linearity was established for all three short chain fatty acids from 5 to 150 µg/mL with average QC recoveries (3 levels prepared in triplicate throughout run) from 85-110%. Precision on all matrix blanks (n=6) was excellent with %RSD values less than 5% for each short chain fatty acid.

**Conclusion**
This rapid and effective GC/MS analysis can be used to accurately determine the concentration of acetic, butyric, and propionic acid in human feces. The method is specific, accurate, and precise with a large quantifiable range.