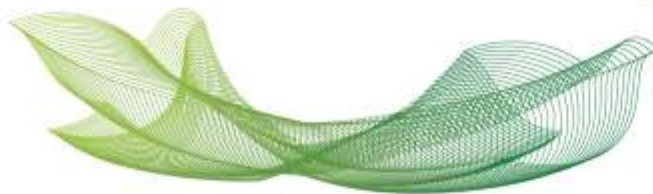


Tipo	Periódico
Título	Plasma Lipid Profile Reveals Plasmalogens as Potential Biomarkers for Colon Cancer Screening
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Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
DOI	10.3390/metabo10060262
Assunto (palavras chaves)	colon cancer; biomarkers; lipidomic; mass spectrometry; plasmalogens
Idioma	Inglês
Fonte	Título do periódico: Metabolites ISSN: 2218-1989 Volume/Número/Paginação/Ano: v. 10, p. 262, 2020
Data da publicação	25 June 2020
Formato da produção	Digital https://doi.org/10.3390/metabo10060262
Resumo	In this era of precision medicine, there is an increasingly urgent need for highly sensitive tests for detecting tumors such as colon cancer (CC), a silent disease where the first symptoms may take 10–15 years to appear. Mass spectrometry-based lipidomics is an emerging tool for such clinical diagnosis. We used ultra-performance liquid chromatography coupled to electrospray ionization quadrupole time-of-flight mass spectrometry operating in high energy collision spectral acquisition mode (MS^E) mode (UPLC-QTOF-MS^E) and gas chromatography (GC) to investigate differences between the plasmatic lipidic composition of CC patients and control (CTR) subjects. Key enzymes in lipidic metabolism were investigated using immuno-based detection assays. Our partial least squares discriminant analysis (PLS-DA) resulted in a suitable discrimination between CTR and CC plasma samples. Forty-two statistically significant discriminating lipids were putatively identified. Ether lipids showed a prominent presence and accordingly, a decrease in glyceronephosphate O-acyltransferase (GNPAT) enzyme activity was found. A receiver operating characteristic (ROC) curve built for three plasmalogens of phosphatidylserine (PS), named PS(P-36:1), PS(P-38:3) and PS(P-40:5), presented an area under the curve (AUC) of 0.998, and sensitivity and specificity of 100 and 85.7% respectively. These results show significant differences in CC patients' plasma lipid composition that may be useful in discriminating them from CTR individuals with a special role for plasmalogens.



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