



Fatty Acid Profile, Comprehensive GC-MS Analysis Kit

Fatty acid profile is one of the factors affecting health values. Besides the fatty acid composition, the ratios between saturated, monounsaturated, and polyunsaturated fatty acids (SFA, MUFA and PUFA, respectively) and trans fatty acids play an important role. In the examination of the fatty acid profile, the deficiency/high level of fatty acids plays an important role in the diagnosis and treatment of diseases caused by fatty acid oxidation disorders (FAO) and peroxisomal disorders. Fat deficiencies in the body are usually caused by inadequate dietary lipid intake due to unbalanced nutrition, prolonged parenteral nutrition, or intestinal malabsorption. Major clinical manifestations associated with FAO include hypoketotic hypoglycemia, liver disease and failure, skeletal myopathy, dilated/hypertrophic cardiomyopathy, and sudden death. Disease-specific characteristic patterns of metabolites resulting from FAO disorders can be detected in blood, bile, urine, and cultured fibroblasts of many living and dying individuals. Quantitative determination of C8-C18 fatty acids is an important element of the study and differential diagnosis of candidate patients. With the fatty acid profile, patients can detect abnormalities when they are asymptomatic and under diet therapy. In peroxisomal disorders, increased serum levels of very long chain fatty acids (VLCFA, C22:0, C24:0, C26:0), pristanic and phytanic acids indicate Zellweger syndrome.

Highlights of the Analysis Kit



Total run time is 33.4 min.



The Jasem method accurately analyses esterified fatty acids in the serum/plasma with single sample preparation



Consuming small volume of patient's sample



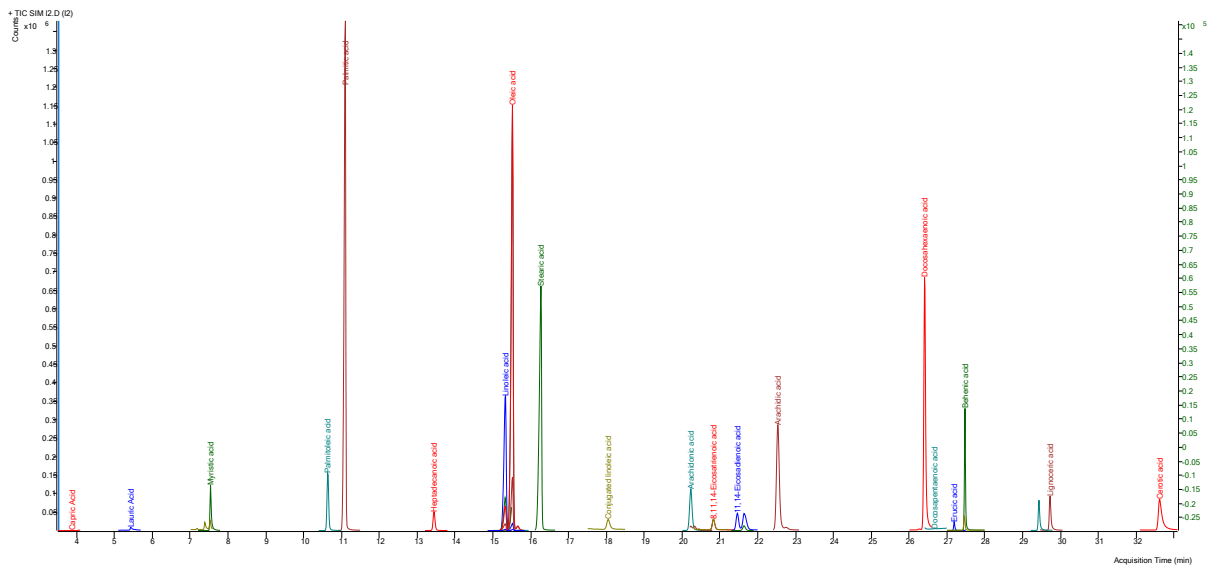
Long life span of GC column

Parameters			
Capric acid	Branched phytanic acid	Arachidonic acid	Docosahexaenoic acid
Lauric acid	Linoleic acid	Eicosapentaenoic acid	Docosapentaenoic acid
Myristoleic acid	Alpha-linolenic acid	8,11,14-Eicosatrienoic acid	Erucic acid
Myristic acid	Oleic acid	11,14-Eicosadienoic acid	Behenic acid
Palmitoleic acid	Elaidic acid	Eicosenic acid	Nervonic acid
Palmitic acid	Stearic acid	11,14,17-Eicosatrienoic acid	Lignoceric acid
Gamma-linolenic acid	Conjugated linoleic acid	Arachidic acid	Cerotic acid
Sample Type			
Serum/Plasma			

Sample Preparation

1	Take 100 µl serum sample into a glass vial
2	Reagent mix prepare into the volumetric flask on ice in fume hood. Reagent 3 is added drop-wise while swirling on R1 and R2, vortex for 10 sec.
3	300 µl of Reagent-mix, vortex for 15 sec.
4	Put the vial into the empty glass tube. Incubate in water bath at 90 min 70°C
5	After cooling to room temperature, the methyl derivatives are transferred in eppendorf, extracted 800 µl Reagent 4 and centrifuge at 3500rpm 2 min.
6	Pipet 600 µl extracted serum samples are dried under stream of nitrogen, dissolved 150 µl Reagent 4, and vortex 10 sec.
7	Transfer the final solution into the insert of HPLC vials

Example Chromatogram



Extracted Chromatogram of comprehensive fatty acids



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