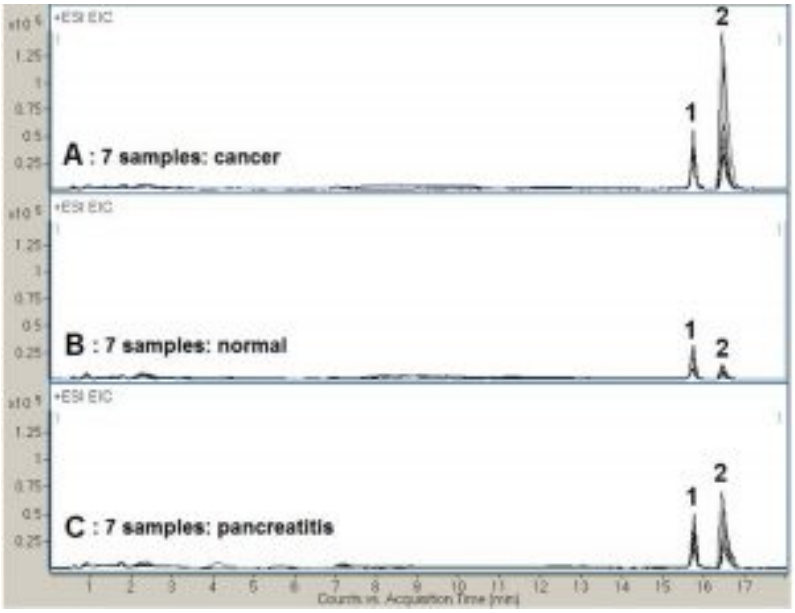
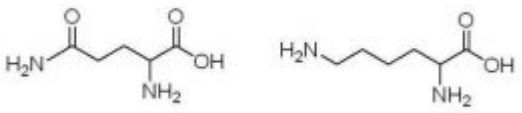
Glutamine and Lysine Analyzed by LCMS – AppNote

Two Isobaric Amino Acid as Biomarkers Found in Saliva

The Chromatogram below shows an interesting aspect of analyzing real patient samples for a pair of metabolites: Glutamine and Lysine. *Figure A* represents 7 samples taken from patients with cancer; *Figure C* shows injections of samples from 7 patients with pancreatitis while *Figure B* represents 7 samples from a control group of healthy people.

In the samples studied generally the Lysine Peak intensity was approximately equal to or greater than the Glutamine Peak intensity in cancer patients while in the normal patients the Lysine Peak was significantly lower in intensity than the Glutamine Peak. Please note the reproducibility of the analysis (retention times) for all samples, despite the variability in the concentration level of the two amino acids in saliva.





1. DL-Glutamine

2. DL-Lysine

Peaks:

1. D,L – Glutamine (M+H)+, 147.0764 m/z
2. D,L – Lysine (M+H)+, 147.1134 m/z

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: 70000-15P-2

Dimensions: 2.1 x 150mm

Mobile Phase:

A: DI Water + 10mM Ammonium Acetate

B: 98% Acetonitrile / 2% 10mM Ammonium Acetate

Gradient:

Time *(minutes)*	%B
0	100
14	60
14.1	5

Temperature: 25°C

Post Time: 5 minutes

Injection vol.: 1µL

Flow rate: 0.4mL / minute

Detection: ESI – pos – Agilent 6210 MSD TOF Mass Spectrometer

t_0: 0.8 minutes

Notes: *Adapted from: "Analysis of Hydrophilic Metabolites in Physiological Fluids by HPLC-MS using a Silica Hydride- Based Stationary Phase", J.J. Pesek, M.T. Matyska, J.A. Loo, S.M. Fischer, T.R. Sana, J. Sep. Sci., 32 (2009) 2200- 2208.*

Attachment

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