



NON-INVASIVE IDENTIFICATION OF POTENTIAL HUMAN STRESS BIOMARKERS BY LC-MSMS

M. João Nunes, Cristina M. Cordas, José J.G. Moura, Luís Branco, João Paulo Noronha

LAQV, REQUIMTE, Departamento de Química, FCT NOVA, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal

Email: mjm.nunes@fct.unl.pt



BIOLOGICAL CHEMISTRY
at FCT/UNL



The aim of this work is the identification of potential stress biomarkers that can lead to a rapid detection and monitoring of stress and/or disease states related with exercise.

In the current study, sweat is the target biological fluid for biomarkers detection.



Sampling after a 90 min football match exercise



Poll sample

Extraction

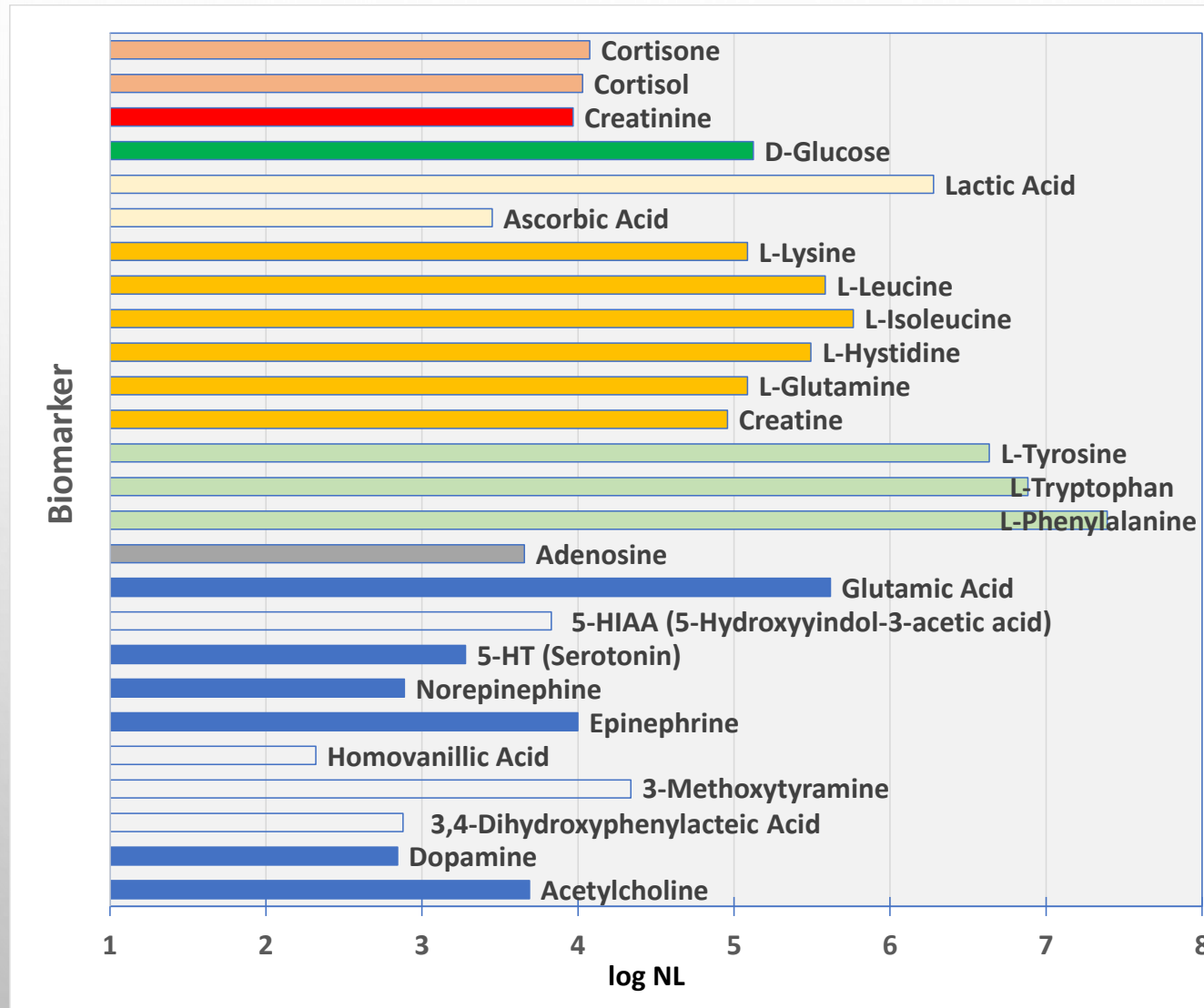


Liquid chromatography with tandem mass spectrometry – LC-MSMS

LC-MSMS analysis

M. João Nunes
2020.10.27
QA 2020

26 Identified Biomarkers



- Steroid hormones
- Breakdown product
- Carbohydrates
- Carboxylic Acids
- Aminoacids
- Precursors BA
- Purine
- Metabolites
- Neurotransmitters

Thank you !!!

Email: mjm.nunes@fct.unl.pt

Acknowledgments

The authors thanks to all the healthy anonymous FCT volunteers that have participated in this study.

Funding

This work was supported by the Associate Laboratory for Green Chemistry-LAQV, with national funds from FCT/MCTES (UID/QUI/50006/2019). The authors also acknowledge the *Fundação para a Ciência e Tecnologia* for financial support through Project PTDC/SAU-SOC/28390/2017 (STRESSSENSE).

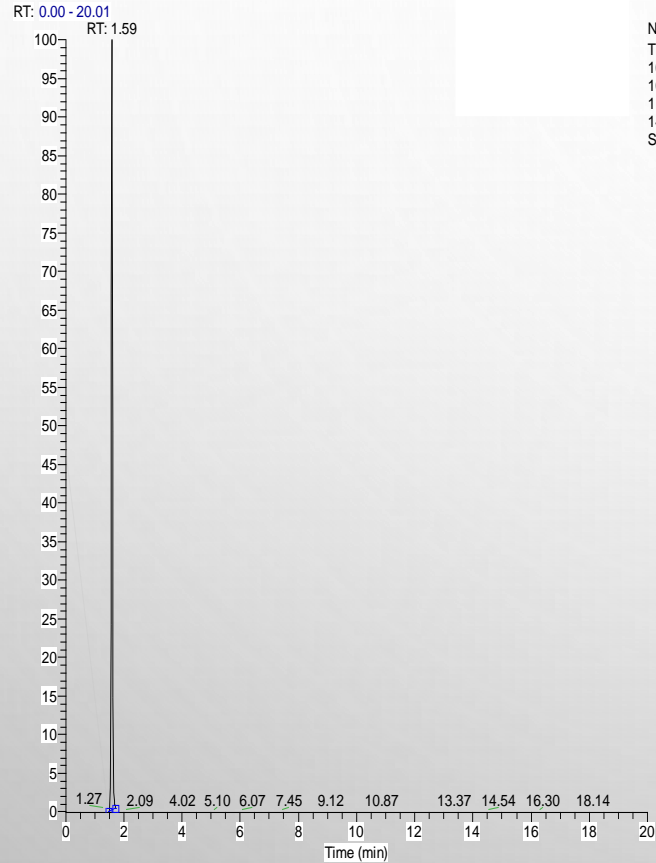


M. João Nunes
2020.10.27
QA 2020

L-Phenylalanine $t_r = 1.59$ +ESI SRM ms2 166.10 \rightarrow 77.00/103.00/120.00/149.00

C:\Xcalibur...10252019\Suor2

10/25/19 12:17:17



NL: 2.47E7
TIC F: + c ESI SRM ms2
166.100 [76.999-77.001,
102.999-103.001,
119.999-120.001,
148.999-149.001] MS
Suor2

Suor2 #2576 RT: 1.59 AV: 1 NL: 2.33E7

F: + c ESI SRM ms2 166.100 [76.999-77.001, 102.999-103.001, 119.999-120.001, 148.999-149.001]

