

A conserved complex lipid signature marks human muscle aging and responds to short-term exercise

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Separation Workflow

Overall study design

Title of the study	Mouse Aging Tissues		
Document creation date	11/23/2023	Corresponding Email	r.h.houtkooper@amsterdamumc.nl
Principle investigator	Riekelt Houtkooper	Is the workflow targeted or untargeted?	Targeted
Institution	Amsterdam UMC	Clinical	No

Lipid extraction

Extraction method	2-phase system	2-phase system	Bligh&Dyer
pH adjustment	None	Were internal standards added prior extraction?	Yes

Analytical platform

Which solvents were used	Solution A (methanol/water, 85:15, v/v). solution B (chloroform/methanol, 97:3 v/v). Solution A contained 5 ml of 25% (v/v) aqueous ammonia per liter of eluent. Solution B contained 0.2 ml of 25% (v/v) aqueous ammonia per liter. Mobile phase consisted of (A) 4:6 (v/v) methanol:water and B 1:9 (v/v) methanol:isopropanol, both containing 0.1% formic acid and 10 mmol/L ammonia.	Ion source	ESI
Number of separation dimensions	One dimension	MS Level	MS1
Separation type 1	LC	Mass resolution for detected ion at MS1	High resolution
Separation mode 1 (liquid)	NP and RP	Resolution at m/z 200 at MS1	280000
Detector	Mass spectrometer	Mass accuracy in ppm at MS1	3
MS type	Orbitrap	Was/Were additional dimension/techniques used	No
MS vendor	Thermo		

Quality control

Blanks	Yes	Quality control	No
Type of Blanks	Extraction blank		

Method qualification and validation

Method validation	No
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Reporting

Are reported raw data uploaded into repository?	Available on request	Raw data upload	Available on request
Are metadata available?	Available on request	Additional comments	Lipid classes detected are described in Extended Data Tables

Sample Descriptions

Mouse Aging Tissues / Mouse / Tissues (e.g., liver, heart, brain)

Perfusion	No	Were samples stored under inert gas?	No
Provided information	-	Additional preservation methods	No
Temperature handling original sample	4-8 °C	Biobank samples	No
Instant sample preparation	No	Sample homogenization	Yes
Storage temperature	-80 °C	Sample homogenization solvent	Water
Additives	None		

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Type of Blanks	Extraction blank	Type of QC sample	Sample pool

Method qualification and validation

Method validation	No
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Additives	None		

Separation Workflow

Overall study design

Title of the study	Human Exercise Intervention		
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Institution	Amsterdam UMC	Clinical	No

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