lipotype
Lipidomics for a better life

TECH SHEET

Total Oxylipins

Deliverables

This pre-validated panel includes more than 126 oxylipins and offers **fully quantitative results** (expressed in pmol). In addition, the amount of each sample used is provided (weight or volume). This analysis package allows to measure total amount of oxylipins including both esterified and free form.

Method

Oxylipins are analysed by **LC/ESI-MS/MS** with an Agilent 1290 HPLC system combined with an Agilent 6495 Triplequad mass spectrometer (Agilent Technologies, Santa Clara, USA). Samples are extracted with organic solvents and alkaline hydrolysis is performed. For lipid quantification, deuterated internal standards are added prior to sample extraction. Crude extracts are further purified by solid phase extraction (SPE). Clean extracts are loaded on the LC system for LC/ESI-MS/MS analysis. Mass spectrometry analysis is performed with multiple reaction monitoring (MRM) in negative ion mode with at least two mass transitions for each compound. Data analysis is done using Mass Hunter software (Agilent Technologies).

Sample submission guidelines

SAMPLE TYPE	SAMPLE AMOUNT	SHIPMENT CONDITIONS
Whole blood, plasma, serum	500 µl	*Frozen, on dry ice*
Tissue	40 mg	*Frozen pieces of tissues, on dry ice*
Feces	20 mg	*Frozen, on dry ice*
Cells	3×10^6 cells *or* 500 µg of total protein	*Frozen cell pellet, on dry ice*
Cell supernatant, media, liquids, etc.	0.5–20 ml	*Frozen, on dry ice*

Minimal sample number: 10

Standard turnaround time: 6 weeks

(for projects with up to 100 samples)

Expedited delivery is possible for an additional fee.

Applications

- Nutrition (omega-3/6)
- Inflammation
- CYP/LOX pathway
- Lipid hydroperoxide generation & turnover
- Lipid oxidation

Covered analytes

ANALYTE	FATTY ACID	CATEGORY	SUBCLASS	LLOQ* [pg]
10,11-DiHDPA	DHA	*Docosanoids*		5.3
10,11-EDP	DHA	*Docosanoids*		2.7
10-HDHA	DHA	*Docosanoids*		2.9
11,12-DHET	ARA	*Eicosanoids*		2.1
11,12-DiHETE	EPA	*Eicosanoids*		2.8
11,12-EEQ	EPA	*Eicosanoids*		6.5
11,12-EET	ARA	*Eicosanoids*		2.5
11-HDHA	DHA	*Docosanoids*		3.5
11-HEPE	EPA	*Eicosanoids*		52.7
11-HETE	ARA	*Eicosanoids*		5.1
12,13-DiHOME	LA	*Octadecanoids*		1.2
12,13-EpOME	LA	*Octadecanoids*		5.1
12-HEPE	EPA	*Eicosanoids*		4.6
12-HETE	ARA	*Eicosanoids*		6.7
12-HETrE	DGLA	*Eicosanoids*		4.9
12-HHTrE	ARA	*Eicosanoids*		2.3
12-HpEPE	EPA	*Eicosanoids*		2.3
12-HpETE	ARA	*Eicosanoids*		2.9
12-oxo-ETE	ARA	*Eicosanoids*		46.4
12-oxo-LTB4	ARA	*Eicosanoids*	*Leukotriene*	12.1
13,14-DiHDPA	DHA	*Docosanoids*		4
13,14-EDP	DHA	*Docosanoids*		3.5
13-gamma-HOTrE	GLA	*Octadecanoids*		3.2
13-HDHA	DHA	*Docosanoids*		15.6
13-HODE	LA	*Octadecanoids*		3
13-HOTrE	ALA	*Octadecanoids*		3.2
13-HpODE	LA	*Octadecanoids*		5.3
13-HpOTrE	ALA	*Octadecanoids*		4.9
13-HpOTrE-gamma	GLA	*Octadecanoids*		24.3
13-oxo-ODE	LA	*Octadecanoids*		1.9
14,15-DHET	ARA	*Eicosanoids*		2.6
14,15-DiHETE	EPA	*Eicosanoids*		3.9
14,15-EEQ	EPA	*Eicosanoids*		10.3
14,15-EET	ARA	*Eicosanoids*		2.6
14,15-EpEDE	DGLA	*Eicosanoids*		3.3
14-HDHA	DHA	*Docosanoids*		2.8
15(R)epi-LXA4	ARA	*Eicosanoids*	*Lipoxin*	6.2
15-HEPE	EPA	*Eicosanoids*		2.9

ANALYTE	FATTY ACID	CATEGORY	SUBCLASS	LLOQ [pg]
15-HETE	ARA	*Eicosanoids*		5.1
15-HETrE	DGLA	*Eicosanoids*		5.1
15-HpEPE	EPA	*Eicosanoids*		4.6
15-HpETE	ARA	*Eicosanoids*		4.6
15-oxo-ETE	ARA	*Eicosanoids*		6.9
16,17-DiHDPA	DHA	*Docosanoids*		4.7
16,17-EDP	DHA	*Docosanoids*		34.9
16-HDHA	DHA	*Docosanoids*		2.9
16-HETE	ARA	*Eicosanoids*		2.8
17(R)RvD1	DHA	*Docosanoids*	*Resolvin*	6.3
17(R,S)-RvD4	DHA	*Docosanoids*	*Resolvin*	5.9
17,18-DiHETE	EPA	*Eicosanoids*		6
17,18-EEQ	EPA	*Eicosanoids*		7.8
17-HDHA	DHA	*Docosanoids*		9.4
17-HETE	ARA	*Eicosanoids*		2.2
17-HpDHA	DHA	*Docosanoids*		3.3
18-COOH-dinor-LTB4	ARA	*Eicosanoids*	*Leukotriene*	8.9
18-HEPE	EPA	*Eicosanoids*		5.2
18-HETE	ARA	*Eicosanoids*		2.8
19,20-DiHDPA	DHA	*Docosanoids*		6.3
19,20-EDP	DHA	*Docosanoids*		5.8
19-HEPE	EPA	*Eicosanoids*		9
19-HETE	ARA	*Eicosanoids*		7.3
20-COOH-ARA	ARA	*Eicosanoids*		26.2
20-COOH-LTB4	ARA	*Eicosanoids*	*Leukotriene*	8.9
20-HDHA	DHA	*Docosanoids*		4.4
20-HEPE	EPA	*Eicosanoids*		31.4
20-HETE	ARA	*Eicosanoids*		25.4
22-HDHA	DHA	*Docosanoids*		8.7
4-HDHA	DHA	*Docosanoids*		3.3
4-oxo-DHA	DHA	*Docosanoids*		32.3
5(S),15(S)-DiHETE	ARA	*Eicosanoids*		12.8
5(S),12(S)-DiHETE	EPA	*Eicosanoids*		4
5,6-DHET	ARA	*Eicosanoids*		2
5,6-DiHETE	EPA	*Eicosanoids*		3.2
5,6-EEQ	EPA	*Eicosanoids*		250
5,6-EET	ARA	*Eicosanoids*		19.6
5-HEPE	EPA	*Eicosanoids*		4.1
5-HETE	ARA	*Eicosanoids*		4.1
5-HETrE	DGLA	*Eicosanoids*		2.1

ANALYTE	FATTY ACID	CATEGORY	SUBCLASS	LLOQ [pg]
5-HpEPE	EPA	*Eicosanoids*		5
5-HpETE	ARA	*Eicosanoids*		5
5-oxo-ETE	ARA	*Eicosanoids*		9.5
6(S)-LXA4	ARA	*Eicosanoids*	*Lipoxin*	6.3
6-trans-epi-LTB4	ARA	*Eicosanoids*	*Leukotriene*	4.2
6-trans-LTB4	ARA	*Eicosanoids*	*Leukotriene*	4.2
7,8-DiHDPA	DHA	*Docosanoids*		2.8
7,8-EDP	DHA	*Docosanoids*		3.9
7-epi-MaR1	DHA	*Docosanoids*	*Maresin*	5.8
7-HDHA	DHA	*Docosanoids*		5.5
8(S),15(S)-DiHETE	ARA	*Eicosanoids*		17.7
8,9-DHET	ARA	*Eicosanoids*		5.2
8,9-DiHETE	EPA	*Eicosanoids*		3.6
8,9-EEQ	EPA	*Eicosanoids*		10.4
8,9-EET	ARA	*Eicosanoids*		57.2
8-HDHA	DHA	*Docosanoids*		10.7
8-HEPE	EPA	*Eicosanoids*		4.3
8-HETE	ARA	*Eicosanoids*		49.2
8-HETrE	DGLA	*Eicosanoids*		9.2
9,10-DiHOME	LA	*Octadecanoids*		1.1
9,10-EpOME	LA	*Octadecanoids*		5.4
9-HEPE	EPA	*Eicosanoids*		9.1
9-HETE	ARA	*Eicosanoids*		46.9
9-HODE	LA	*Octadecanoids*		5.9
9-HOTrE	ALA	*Octadecanoids*		8.6
9-HpODE	LA	*Octadecanoids*		6.4
9-HpOTrE	ALA	*Octadecanoids*		6.4
9-oxo-ODE	LA	*Octadecanoids*		11.1
9-oxo-OTrE	ALA	*Octadecanoids*		5.1
LTB3	ETA	*Eicosanoids*	*Leukotriene*	7.1
LTB4	ARA	*Eicosanoids*	*Leukotriene*	2.8
LTB5	EPA	*Eicosanoids*	*Leukotriene*	3
LXA4	ARA	*Eicosanoids*	*Lipoxin*	5.9
LXA5	EPA	*Eicosanoids*	*Lipoxin*	5.2
LXB4	ARA	*Eicosanoids*	*Lipoxin*	6.3
Mar 1	DHA	*Docosanoids*	*Maresin*	5.8
Mar 2	DHA	*Docosanoids*	*Maresin*	5.8
NPD1	DHA	*Docosanoids*		3.6
NPDx	DHA	*Docosanoids*		3.6

ANALYTE	FATTY ACID	CATEGORY	SUBCLASS	LLOQ [pg]
RvD1	DHA	*Docosanoids*	*Resolvin*	6.5
RvD2	DHA	*Docosanoids*	*Resolvin*	5.6
RvD3	DHA	*Docosanoids*	*Resolvin*	5.3
RvD4	DHA	*Docosanoids*	*Resolvin*	4
RvD5	DHA	*Docosanoids*	*Resolvin*	3.9
RvE1	EPA	*Eicosanoids*	*Resolvin*	3.7
RvE2	EPA	*Eicosanoids*	*Resolvin*	2
RvE4	EPA	*Eicosanoids*	*Resolvin*	2
tetranor-12-HETE	ARA	*Eicosanoids*		2.2

** lower limit of quantification*

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