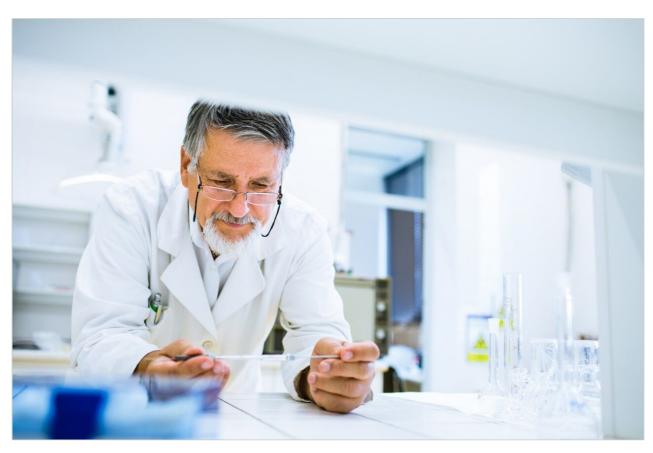
## Waters™

Nota applicativa

# Targeted UPLC-MS/MS Analysis of Oxylipins

Billy J. Molloy

Waters Corporation



For research use only. Not for use in diagnostic procedures.

#### **Abstract**

Here we present a targeted UPLC-MS/MS methodology for the semi-quantitative profiling of bioactive oxylipins (oxidized fatty acids) in plasma/serum and cell culture media. The combination of mixed mode solid-phase extraction (Oasis MAX µElution SPE) and UPLC-MS/MS provides a broad ranging analysis of oxylipins for use in targeted workflows. Retention times and MRM transitions for 92 oxylipins are detailed for routine, targeted analysis of samples in biomedical research studies.

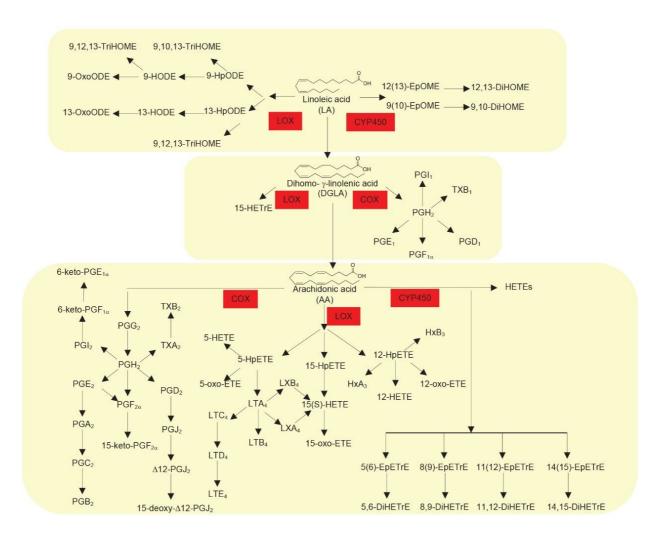
#### **Benefits**

- Analytically sensitive and selective UPLC-MS/MS methodology for the analysis of 92 oxylipins in a single analytical run
- · Separation of key isomeric compounds
- · A simple analytical workflow without derivatization

#### Introduction

Oxylipins are important bioactive lipids that play prominent roles in many key biological processes, most notably in instigation and resolution of inflammation. As such, the semi-quantitative profiling of a wide range of oxylipins in plasma/serum and cell culture samples would be advantageous for use in biomedical research studies. Oxylipins are produced by enzymatic and non-enzymatic oxygenation of omega-6 polyunsaturated fatty acids (linoleic acid, adrenic acid, and arachidonic acid) and omega-3 polyunsaturated fatty acids – α-linolenic acid, eicosapentaenoic acid and docosahexaenoic acid – see Figures 1 and 2. The major metabolic pathways involved in the generation of this class of compounds are the cyclooxygenase (COX), lipoxygenase (LOX), and cytochrome P450 (CYP) pathways. These pathways are important drug targets for multiple diseases and therefore a semi-quantitative profiling methodology is highly relevant in drug discovery. The semi-quantitative analysis of oxylipins is however very challenging, due to their low endogenous concentration and their limited stability within samples. In addition, the same fatty acid precursor can react at different positions on the molecule, leading to multiple isomeric species. An analytically specific and sensitive methodology is therefore required. Analysis of oxylipins has previously been performed using radiometric and enzymatic immunoassays, but these methods often lack selectivity and target a limited number of compounds. Gas chromatography (GC-MS) methods have also been used, but these methods

require complex procedures involving derivatization. Here we demonstrate a targeted UPLC-MS/MS method for the profiling of 92 oxylipins in plasma/serum and cell culture samples.



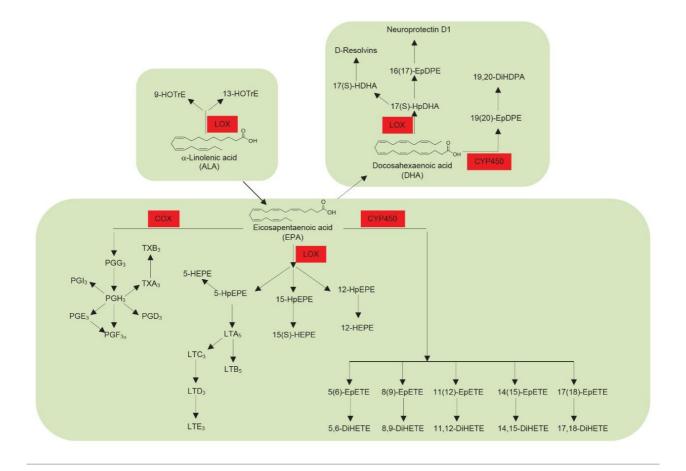


Figure 1 and 2. Schematic of the metabolic pathways that lead to the formation of oxylipins.

### Experimental

#### Sample Preparation

Sample pre-treatment (centrifuge sample prior to dilution)

- $\cdot~$  For plasma/serum: sample dilution: 150  $\mu L$  plasma sample + 550  $\mu L$  water
- . For cell culture: sample dilution: 300  $\mu L$  cell culture sample + 400  $\mu L$  [85:15 (200  $\mu M$  ammonium bicarbonate : methanol)]

Solid phase extraction using Waters Oasis MAX µElution plate (for plasma)

- · Condition with 200 µL methanol
- · Condition with 200 µL of water

- · Load sample (total volume)
- · Wash with 600 µL of water
- · Wash with 600 µL of methanol
- · Prepare collection plate by adding 30 µL of 10% glycerol<sub>(aq)</sub> to each well
- · Elute as slowly as possible with 30 μL 50:50 ACN:IPA + 5% formic acid
- · Seal plate with polypropylene mat cap
- · Mix plate
- · Inject 3 µL onto the UPLC-MS/MS system

Solid phase extraction using Waters Oasis MAX µElution plate (for cell culture)

- · Condition with 200 µL methanol
- · Condition with 200 µL of [85:15 (200 uM ammonium bicarbonate: methanol)]
- Load sample (total volume)
- · Wash with 600 μL of [85:15 (200 uM ammonium bicarbonate: methanol)]
- · Wash with 600 µL of methanol
- · Prepare collection plate by adding 30 μL of 10% glycerol<sub>(ag)</sub> to each well
- $\cdot$  Elute as slowly as possible with 30  $\mu L$  50:50 ACN:IPA + 5% formic acid
- · Seal plate with polypropylene mat cap
- Mix plate
- · Inject 3 µL onto the UPLC-MS/MS system

#### **UPLC** Conditions

UPLC separation was performed with an ACQUITY UPLC I-Class System equipped with an ACQUITY Premier BEH  $C_{18}$  (2.1 x 150 mm) analytical column maintained at 35 °C. A 3  $\mu$ L aliquot of the sample was injected onto the column and eluted under reversed-phase gradient conditions where mobile phase A comprised 0.01% formic acid<sub>(aq)</sub> and mobile phase B comprised 0.01% formic acid in acetonitrile. Oxylipins were eluted from the column and separated using a 3-stage linear gradient. An initial stage of 25–28% mobile phase B over 4 minutes was followed by a second phase of 28–32% mobile phase B over 8 minutes. Finally, a third stage of 14 minutes from 32–95% mobile phase B was followed by a 2-minute column flush and then re-equilibration back to starting conditions.

#### **MS Conditions**

Oxylipins were detected using Multiple Reaction Monitoring (MRM) analyses on a Xevo TQ-XS Mass Spectrometer. All experiments were performed in negative electrospray ionization (ESI-) mode. The ion source temperature and capillary voltage were kept constant and set to 150 °C and 2.0 kV, respectively. The cone gas flow rate was 50 L/hr and desolvation temperature was 650 °C. The MRM transitions employed are detailed in Table 1.

#### Informatics

Method information was imported onto the LC-MS system using the Quanpedia functionality within MassLynx. This extendable and searchable database produces LC and MS methods as well as processing methods for use in TargetLynx for compound quantification.

#### LC Conditions

LC system:	ACQUITY UPLC I-Class		
Detection:	Xevo TQ-XS		
Column(s):	ACQUITY Premier BEH C <sub>18</sub> (2.1 x 150 mm)		
Column temp.:	35 °C		
Sample temp.:	6 °C		
Injection volume:	3 uL		
Flow rate:	0.4 mL/min		
Mobile phase A:	0.01% formic acid (aq)		
Mobile phase B:	0.01% formic acid in acetonitrile		
Gradient:	0-4 minutes 25-28% B		
	4–12 minutes 28–32% B		

#### **MS Conditions**

MS system: Xevo TQ-XS

Ionization mode: ESI negative

Capillary voltage: 2.0 kV

#### Results and Discussion

The focus of this work was to demonstrate a sensitive and specific UPLC-MS/MS method for profiling bioactive oxylipins in plasma, serum, and cell culture samples. Oxylipins are present at very low levels in biological samples and good sample preparation is very important for successful analysis. In order to remove as many non-relevant matrix components as possible-and to maximize sensitivity for the low abundance analytes – we used an anion exchange, mixed mode solid-phase extraction (Oasis MAX SPE) prior to UPLC-MS/MS analysis. This type of SPE specifically targets and extracts acids from the matrix resulting in much cleaner samples than a standard SPE method.

As a class of compounds, oxylipins have a particularly high number of structurally similar, and therefore isobaric, compounds. To achieve separation of these species, having the correct chromatographic conditions is critical. The reversed-phase UPLC conditions used here were extensively optimized, comparing various mobile phase/stationary phase combinations in order to obtain conditions that allowed separation of the multiple isobaric compounds. Figure 3 is a representative chromatogram from a pooled human plasma sample and shows the elution order of the most abundant oxylipins in the sample. Table 1 gives a comprehensive list of all the retention times and optimized MRM conditions for all 92 analytes. Figure 4 is an example of where the excellent specificity of the UPLC gradient is demonstrated. As is clear from the chromatograms shown, the ability to separate 2 structural isomers (i.e. PGE2 and PGD2) from a solvent standard is not sufficient as the matrix contains even more isobaric forms of these same compounds. The UPLC chromatograms shown for PGE2 and PGD2 in human plasma show just how many isobars there are for these analytes (the arrows indicate the analyte peaks).

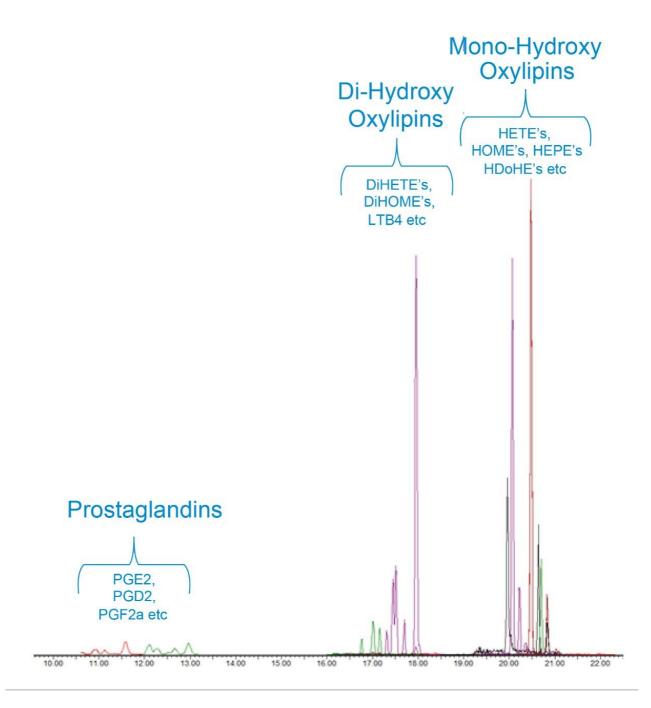


Figure 3. UPLC-MS/MS chromatogram showing the elution order for some of the most abundant oxylipins in human plasma. (For a comprehensive list of analytes and retention times, see Table 1.)

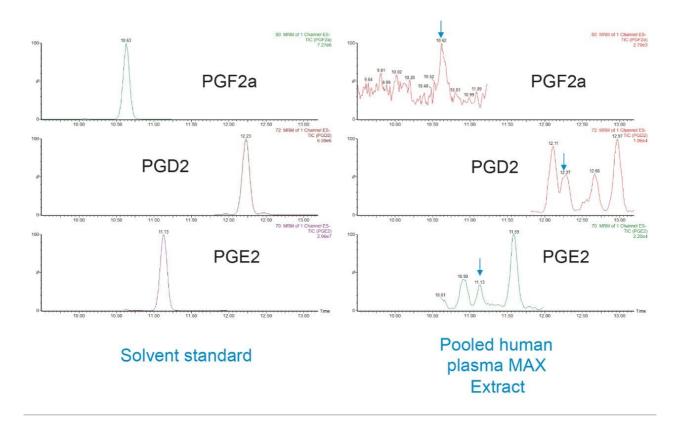


Figure 4. UPLC-MS/MS chromatograms for prostaglandins in human plasma and solvent standards. (Arrows indicate the correct peak in the human plasma sample.)

Using a Xevo TQ-XS in negative ESI-mode, retention times and optimal MRM transitions were determined for all individual oxylipins (Table 1). To enhance the sensitivity of detection, these MRM transitions were monitored in defined retention time windows, maximizing dwell times by reducing overlapping transitions.

Using this UPLC-MS/MS method, we rapidly profiled 92 oxylipins in plasma, serum, and cell culture samples.

Beise (SP) PAZE 353.1 93.0 60 92 7.0   Beise (SP) PAZE 353.1 93.0 60 20 7.0   Beise (PAZE 353.1 93.0 60 20 7.0   Beise (PAZE 353.1 93.0 60 20 8.0   Beise (P	Compound	Precursor Mass	Product Mass	Cone Voltage (V)	Collison Energy (eV)	RT (mins)
Resolvin Disposition of the property of the p	6-keto PGF1cx					
TYRS2						
11-PPP2:						
(a) \$ 6.972a.vii						
### PGE 20						
6-iso P662   3911   2711   30   16   10.94						
Lipour A5		The Control of the Co		and the second second	min distribu	
PGE2 3911 2711 30 16 1170 Repolan D2 3751 1771 30 16 172 Repolan D2 3751 1771 30 1771 30 1772 Repolan D2 3751 1772 30 1772 Repolan D2 3751 1772 R						
Resolvin D D						
Lipson 64   3511   2211   30   16   12-56	11β-PGE2	351.1	271.1	30	16	11.70
PGD2   39.11   271.11   30   16   12.56			147.0	25	18	12.43
15-keto PGE2   349.1   207.1   40   12   12.00   18.00   19.						
Resolvin DZ						
13.14-dilydro-16-keto-76E2   351.1   113.0   20   28   14.20						- Advisoration and the contract of the contrac
Resolvin DI Lipoin AA						
Lipode AA   3511   115.0   25   13   14.86						
15(R)-Liposin A4						
6(S)-Lipoxin A4 3511 115.0 25 13 15.10 13.1-10-070-16-keto PO2 3511 113.0 20 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 15.34 113.0 120 28 18 18 15.30 17.00 17.1-10-10-10-17 120 25 18 18 15.00 17.00 17.1-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-17 120 25 13 17.2-10-10-10-10-10-10-10-10-10-10-10-10-10-				25	13	
13.14-elhydro-16-keto-POO2   351.1   113.0   20   28   16.34   1.174   1.174   4.961.1   177.0   25   18   16.385   1.184		375.1	141.0			14.83
LTD4					1000	
LTE4						
B(S),15(S)-DIRTE						
17,16-DiHETE   335.1   15.0   25   13   17.25		The Antique Property of the Pr			AND THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS	
S(S) S(S)-DHETE   335.1   115.0   25   13   17.26						
Netwoprotectin D1   359.1   153.0   25   13   17.55						
Resolvin DS   398.1   119.0   25   13   17.44						
14,16-DHETE						4
18-deoxy_Al2_IA-PGD2	14,15-DiHETE	335.1	207.0	25	14	17.50
12,13-DiHOME   313.1   183.0   35   15   17.70						
9,10-DiHOME   313.1   201.0   35   15   18.40				Vicinity and the second		
14,15-DHETEE   337.0   207.0   25   15   18.40		11.07/07/07/07		1.000		F14 (575/4/3005)
19,20-DI-IDPA   361.1   273.1   25   14   18.47     12S-HHTE   337.1   167.0   25   16   18.50     11,12-DI-ETE   337.1   167.0   25   16   18.50     9-HOTE   293.1   171.0   30   12   19.10     8,9-DI-ETE   337.1   127.0   25   16   19.10     13-HOTE   293.1   127.0   25   16   19.10     13-HOTE   293.1   127.0   25   16   19.10     15-deoxy-d2_LH-PG/2   315.1   271.1   10   12   19.50     5(S),6(P)-DHETE   335.1   116.0   25   14   19.50     5(S),6(P)-DHETE   337.1   146.0   25   16   19.55     5(S),6(S)-DHETE   335.1   116.0   25   16   19.55     5(S),6(S)-DHETE   337.1   146.0   25   16   19.55     5(S),6(S)-DHETE   337.1   116.0   25   16   19.55     12(S)-HEPE   317.1   115.0   35   15   19.73     13-HODE   295.1   195.0   46   14   20.17     13-HODE   295.1   195.0   35   15   20.24     9-HODE   343.1   341.1   35   15   20.24     15-HETE   319.1   175.0   35   17   20.45     15-HODHE   343.1   201.0   35   15   20.24     15-HODE   343.1   201.0   35   15   20.45     17-HODHE   343.1   201.0   35   15   20.49     17-HODHE   343.1   310.0   30   16   20.60     13-HODE   293.1   165.0   30   16   20.60     13-HODE   293.1   113.0   30   16   20.60     13-HODHE   343.1   193.0   35   15   20.55     17-HODHE   343.1   193.0   35   15   20.65     17-HODHE   343.1   193.0   35   15   20.65     18-HOTE   393.1   165.0   30   16   20.60     13-HODHE   343.1   193.0   35   15   20.65     13-HODHE   343.1   193.0   35   15   20.65     13-HODHE   343.1   193.0   30   16   20.60     13-HODHE   343.1   193.0   35   15   20.65     15-HETE   319.1   167.0   35   15   20.55     16-HODHE   343.1   193.0   30   16   20.60     18-HETE   319.1   167.0   35   15   20.55     18-HETE   317.1   13.0   30   16   20.60     18-HETE   317.1   13.0   30   17   20.27     18-HETE   317.1   15.0   30   17   20.20     19-HETE   317.1   15.0   30   17   20.20     19-HETE   317.1   15.0   30   17   20.20					10000	
12S-HHTE	The state of the s	34,034,434,634				
11,12-DHETER   337,1   167,0   25   16   18,80						
8.9-DiHETIE   337,1   127,0   25   16   19,16   19-24   15-deoxy-A12,14-PG12   315.1   271.1   10   12   19.50   5(S),6(R)-DiHETE   335.1   115.0   25   14   19.50   5(S),6(R)-DiHETE   337.1   145.0   25   16   19.65   5(S),6(S)-DiHETE   337.1   145.0   25   16   19.65   5(S),6(S)-DiHETE   337.1   179.0   35   15   19.65   5(S),6(S)-DiHETE   317.1   179.0   35   15   19.65   5(S)-HEPE   317.1   115.0   35   15   20.17   13-HODE   296.1   195.0   45   14   20.17   20-HOOHE   343.1   341.1   35   15   20.24   39-HODE   296.1   171.0   35   15   20.26   15-HETE   319.1   176.0   35   15   20.26   15-HETE   319.1   176.0   35   15   20.26   17.10   35   15   20.26   17.10						
13-HOTE	The Property of the Control of the C		171.0		12	
15-deoxy-A12,14-PQ12   316.1   271.1   10   12   19.50	8,9-DiHETrE	337.1	127.0	25	16	19.16
5(S),6(P)-DiHETE   335.1   115.0   25   14   19.50	100000000000000000000000000000000000000			1,000,000	112	
5.6-DiREITE   337.1   145.0   25   16   19.65     5[S],6(S)-DiRETE   371.1   179.0   35   15   19.55     5[S],4EPE   317.1   179.0   35   15   19.55     5[S],4EPE   317.1   115.0   35   15   19.55     5[S],4EPE   317.1   115.0   35   15   20.17     13.4-HODE   295.1   195.0   45   14   20.17     20.4-HDDHE   343.1   341.1   35   15   20.24     9.4-HODE   295.1   171.0   35   15   20.24     9.4-HODE   295.1   171.0   35   15   20.26     15.4ETE   319.1   175.0   35   11   20.45     16.4-HDOHE   343.1   233.0   35   15   20.26     17.4-HOHE   343.1   201.0   35   16   20.55     17.18)-EPETE   317.1   215.0   20   10   20.56     9.4-HODE   293.1   133.0   35   16   20.55     3.4-HODE   293.1   133.0   30   18   20.63     13.4-HODE   293.1   133.0   35   15   20.65     13.4-HODE   293.1   133.0   35   15   20.65     13.4-HODHE   343.1   133.0   35   15   20.65     14.4-HODHE   343.1   205.0   35   15   20.72     15.4-HETE   317.1   113.0   30   16   20.75     14.4-HODHE   343.1   153.0   35   15   20.51     15.4-KETE   317.1   113.0   30   17   20.93     14.15-LEPTE   317.1   17.0   35   15   20.51     15.4-KETE   317.1   17.0   30   17   20.93     16.4-HODHE   343.1   149.0   35   15   20.51     17.4-HOHE   343.1   149.0   35   15   20.93     17.4-HOHE   343.1   149.0   35   15   20.93     17.4-HOHE   343.1   140.0   35   15   20.93     17.4-HOHE						
15(5),6(5),0HEPE   317.1   179.0   35   15   19.35   15   19.35   15   19.35   15   19.35   15   19.35   15   15   19.35   15   15   19.35   15   15   19.35   15   15   19.35   15   15   19.35   15   15   10.17   13.4HODE   295.1   195.0   45   14   20.17   13.4HODE   295.1   171.0   35   15   20.24   15   15   20.26   15.4ETE   319.1   175.0   35   15   20.26   15.4ETE   319.1   175.0   35   11   20.45   16.4HODE   343.1   233.0   35   16   20.49   17.4HODE   343.1   201.0   35   16   20.49   17.4HODE   343.1   201.0   35   16   20.45   17.4HODE   343.1   201.0   35   16   20.45   17.4HODE   293.1   185.0   30   16   20.65   17.4HODE   293.1   185.0   30   16   20.65   13.4HODE   293.1   133.0   35   15   20.65   13.4HODE   293.1   113.0   30   18   20.63   13.4HODE   293.1   113.0   30   18   20.63   13.4HODE   293.1   113.0   30   17   20.72   11.4HETE   319.1   167.0   35   15   20.75   14.4HODHE   343.1   205.0   35   15   20.75   14.4HODHE   343.1   205.0   35   15   20.75   14.4HODHE   343.1   153.0   35   15   20.75   10.4HODHE   343.1   153.0   35   15   20.75   10.4HODHE   343.1   153.0   35   15   20.81   15.4ETE   317.1   113.0   30   17   20.93   14(15)-EpETE   317.1   13.0   30   17   20.93   14(15)-EpETE   317.1   13.0   30   17   20.93   14(15)-EpETE   317.1   13.0   30   17   20.93   14(15)-EpETE   317.1   15.0   20   10   20.90   11.4HODHE   343.1   149.0   35   15   20.31   14(15)-EpETE   317.1   167.0   20   10   20.90   11.4HODHE   343.1   149.0   35   15   20.31   14(15)-EpETE   317.1   167.0   20   10   20.90   11.4HODHE   343.1   149.0   35   15   20.31   14(15)-EpETE   317.1   167.0   20   10   20.90   11.4HODHE   343.1   149.0   35   15   20.31   14.4HODHE   343.1   149.0   35   15   20.91   14.4HODHE   343.1   149.0   35   15   20.91   14.4HODHE   343.1   149.0   35   15   20.91   14.4HODHE   343.1   1		0.00000000		107.00	100.00	100000000000000000000000000000000000000
12(5)-HEPE 317.1 115.0 35 15 20.17 13-HODE 295.1 195.0 45 14 20.17 13-HODE 295.1 195.0 45 14 20.17 13-HODE 295.1 195.0 45 14 20.17 13-HODE 295.1 195.0 45 15 20.24 29-HODE 295.1 171.0 35 15 20.24 19-HODE 295.1 171.0 35 15 20.28 15-HETE 319.1 175.0 35 11 20.48 11-HDDHE 343.1 233.0 35 11 20.48 11-HDDHE 343.1 233.0 35 15 20.49 17-HDDHE 343.1 201.0 35 15 20.25 17(18)-Epite 317.1 215.0 20 10 20.56 20.56 20.49 20.49 20.49 20.40 2						
S(S)-HEPE   317.1   116.0   36   16   20.17     13-HODE   295.1   195.0   45   14   20.17     20-HDDHE   343.1   341.1   35   15   20.24     9-HODE   295.1   171.0   35   15   20.26     15-HETE   319.1   175.0   35   11   20.45     16-HDDHE   343.1   233.0   35   15   20.49     17-HDDHE   343.1   201.0   35   15   20.49     18-HDDDE   293.1   185.0   30   16   20.65     19-HDDDE   293.1   185.0   30   16   20.60     13-HDDHE   343.1   193.0   30   16   20.63     13-HDDHE   343.1   193.0   30   17   20.22     11-HETE   319.1   167.0   35   15   20.65     13-KODE   293.1   113.0   30   17   20.72     15-HEFTE   317.1   113.0   30   16   20.75     14-HDDHE   343.1   205.0   35   15   20.75     10-HDDHE   343.1   153.0   35   15   20.75     10-HDDHE   343.1   153.0   35   15   20.81     15-KETE   317.1   113.0   30   17   20.93     14(15)-EPETE   317.1   113.0   30   17   20.93     14(15)-EPETE   317.1   179.0   20   10   20.90     19-KODE   293.1   185.0   30   17   20.90     11-HDDHE   343.1   149.0   35   15   20.91     11-HDDHE   343.1   149.0   35   15   20.93     11-HDDHE   343.1   140.0   35   15   20.93     11-HDDHE   343.1   140						
13-HODE						
20-HDOHE   343.1   341.1   35   15   20.24     9-HODE   295.1   171.0   35   15   20.26     15-HETE   319.1   175.0   35   11   20.45     16-HDOHE   343.1   233.0   35   16   20.49     17-HDOHE   343.1   233.0   35   15   20.49     17-HDOHE   343.1   201.0   38   15   20.65     17(18)-EpETE   317.1   215.0   20   10   20.56     9-HpODE   293.1   185.0   30   16   20.60     13-HpOHE   343.1   193.0   30   18   20.63     13-HDOHE   343.1   193.0   35   15   20.65     13-KODE   293.1   113.0   30   17   20.72     11-HETE   319.1   167.0   35   15   20.75     10-HDOHE   343.1   193.0   30   17   20.72     15-HpETE   317.1   112.0   30   16   20.75     10-HDOHE   343.1   153.0   35   15   20.75     10-HDOHE   343.1   153.0   35   15   20.81     16-KETE   317.1   113.0   30   17   20.93     16-HDOHE   343.1   153.0   35   15   20.81     16-KETE   317.1   207.0   20   10   20.90     9-KODE   293.1   185.0   30   17   20.90     9-KODE   293.1   149.0   35   15   20.93     12-HETE   319.1   179.0   30   17   20.90     18-HETE   319.1   179.0   30   12   20.97     11(2)-EpETE   317.1   167.0   20   10   20.00     8-HETE   319.1   179.0   30   12   20.97     11(2)-EpETE   317.1   167.0   20   10   20.00     8-HETE   319.1   155.0   35   14   21.00     16-MOHE   343.1   141.0   35   15   21.06     16(S)-HpETE   317.1   155.0   30   17   20.93     17-HDOHE   343.1   141.0   35   15   21.06     16(S)-HpETE   317.1   155.0   30   17   21.24     18(S)-HpETE   317.1   155.0   30   17   21.24     19-HETE   319.1   155.0   30   30   17   21.24     19-HETE   319.1   155.0   25						
15-HETE		343.1	341.1	35	15	20.24
18-HDoHE						20.26
17-HDOHE   343.1   201.0   35   15   20.55	15-HETE		CONTROL		1/0	20.45
17(19)						
9-HpODE 293.1 186.0 30 16 20.60 13-HpODE 293.1 113.0 30 18 20.63 13-HpOHE 343.1 193.0 35 15 20.65 13-KODE 293.1 113.0 30 17 20.72 11-HETE 319.1 167.0 35 15 20.72 15-HpETE 317.1 113.0 30 16 20.75 14-HpOHE 343.1 153.0 35 15 20.75 14-HpOHE 343.1 153.0 35 15 20.75 14-HpOHE 343.1 153.0 35 15 20.75 10-HpOHE 343.1 153.0 35 15 20.81 15-KETE 317.1 113.0 30 17 20.83 114.15-EpETE 317.1 113.0 30 17 20.83 11-HpOHE 343.1 165.0 30 17 20.90 9-KODE 293.1 165.0 30 17 20.90 11-HpOHE 343.1 149.0 35 15 20.93 12-HETE 319.1 179.0 30 12 20.97 11(12)-EpETE 317.1 167.0 20 10 20.90 10 20.90 10 20.90 11-HpOHE 343.1 144.0 35 15 20.93 12-HETE 319.1 155.0 35 14 21.00 7-HpOHE 343.1 144.0 35 15 20.93 12 20.97 11(12)-EpETE 317.1 167.0 20 10 21.00 8-HETE 319.1 155.0 35 14 21.00 7-HpOHE 343.1 144.0 35 15 20.93 15 20.93 15 20.95						
13-HpODE					10000	
13.4DoHE   343.1   193.0   35   15   20.65     13.KODE   293.1   113.0   30   17   20.72     11.HETE   319.1   167.0   35   15   20.72     15.HpETE   317.1   113.0   30   16   20.75     14.HDoHE   343.1   205.0   35   15   20.75     10.HDoHE   343.1   153.0   35   15   20.81     15.KETE   317.1   113.0   30   17   20.83     14(15)-EPETE   317.1   120.0   20   10   20.90     9.KODE   293.1   185.0   30   17   20.93     11.HDoHE   343.1   149.0   35   15   20.93     12.HETE   319.1   179.0   30   12   20.97     11(12)-EPETE   317.1   167.0   20   10   21.00     8.HETE   319.1   155.0   35   14   21.00     7.HDoHE   343.1   141.0   35   15   21.06     15(S)-HETE   317.1   167.0   20   10   21.00     8(9)-EPETE   317.1   155.0   20   10   21.00     8(9)-EPETE   317.1   155.0   20   10   21.00     12(S)-HpETE   317.1   155.0   20   10   21.10     12(S)-HpETE   317.1   153.0   30   14   21.13     8.HDOHE   343.1   149.0   35   15   21.08     8(9)-EPETE   317.1   155.0   20   10   21.10     12(S)-HpETE   317.1   155.0   30   14   21.13     8.HDOHE   343.1   199.0   35   15   21.16     9.HETE   319.1   167.0   35   15   21.16     12-KETE   317.1   153.0   30   17   21.24     5.HETE   319.1   167.0   35   15   21.16     14-DOHE   343.1   101.0   35   15   21.16     15-HPETE   319.1   167.0   35   10   21.33     4.HDOHE   343.1   20.0   30   16   21.84     12(13)-EPOME   295.1   195.0   25   13   21.66     14(15)-EPT   319.1   159.0   25   13   21.86     14(15)-EPT   319.1   167.0   45   10   21.85     13(14)-EPOPE   343.1   133.1   25   10   21.85     13(14)-EPOPE   343.1   133.1   25   10   21.85     13(14)-EPOPE   343.1   139.1   25   10   21.85     13(14)-EPOPE   343.1   199.0   25   12   22.08     7(S)-EPOPE   343.1   199.0   25   12   2				A	1000	
13-KODE 293.1 113.0 30 17 20.72  11-HETE 319.1 167.0 35 15 20.72  15-HpETE 317.1 113.0 30 16 20.75  14-HDOHE 343.1 205.0 35 15 20.75  10-HDOHE 343.1 153.0 35 15 20.75  10-HDOHE 343.1 153.0 35 15 20.81  15-KETE 317.1 113.0 30 17 20.83  14(16)-EpETE 317.1 207.0 20 10 20.90  9-KODE 293.1 185.0 30 17 20.90  11-HDOHE 343.1 149.0 35 15 20.93  12-HETE 319.1 179.0 30 12 20.93  11-HDOHE 343.1 149.0 35 15 20.93  12-HETE 319.1 150.0 35 15 20.93  17-HDOHE 343.1 141.0 35 15 20.93  8-HETE 319.1 155.0 35 14 21.00  7-HDOHE 343.1 141.0 35 15 21.06  8-HETE 319.1 155.0 20 10 21.00  8-HETE 319.1 155.0 35 15 21.08  8(9)-EpETE 317.1 155.0 20 10 21.00  12(S)-HpETE 317.1 155.0 20 10 21.10  12(S)-HpETE 317.1 150.0 35 15 21.08  8(9)-EpETE 317.1 150.0 35 15 21.08  8(9)-EpETE 317.1 150.0 30 14 21.13  8-HDOHE 343.1 169.0 35 15 21.18  8-HDOHE 343.1 169.0 35 15 21.18  8-HDOHE 343.1 169.0 35 15 21.18  9-HETE 319.1 150.0 35 15 21.18  9-HETE 319.1 150.0 35 15 21.18  12-KETE 319.1 150.0 35 15 21.18  12-KETE 319.1 150.0 35 15 21.18  12-KETE 317.1 153.0 30 14 21.13  8-HDOHE 343.1 169.0 35 15 21.15  12-KETE 317.1 153.0 30 17 21.24  5-HETE 319.1 116.0 35 15 21.16  9-HETE 319.1 116.0 35 15 21.16  12-KETE 317.1 153.0 30 17 21.24  14-HDOHE 343.1 101.0 35 15 21.16  15-HpETE 319.1 116.0 35 15 21.16  16-HPETE 319.1 116.0 35 15 21.16  17-KETE 319.1 116.0 35 10 21.16  18-HDOHE 343.1 241.1 25 10 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 16 21.16  18-HDOHE 343.1 101.0 35 15 20.0 30 17 21.24  18-HDOHE 343.1 101.0 35 15 30.0 30 17 21.24  18-HDOHE 343.1 101.0 35 15 30.0 30 17 21.24  18-HDOHE 343.1 101.0 35 15 30.0 30 17 22.00  18-HDOHE 343.1						
11-HETE   319.1   167.0   35   15   20.72     15-HpETE   317.1   113.0   30   16   20.75     14-HDOHE   343.1   205.0   35   15   20.75     10-HDOHE   343.1   153.0   35   15   20.81     15-KETE   317.1   113.0   30   17   20.83     14(15)-EPETE   317.1   207.0   20   10   20.90     9-KODE   293.1   185.0   30   17   20.90     11-HDOHE   343.1   149.0   35   15   20.91     11-HDOHE   343.1   149.0   35   15   20.93     12-HETE   319.1   179.0   30   12   20.97     11(2)-EPETE   317.1   167.0   20   10   21.00     8-HETE   319.1   155.0   35   14   21.00     7-HDOHE   343.1   141.0   35   15   21.08     8(9)-EPETE   317.1   155.0   20   10   21.10     12(5)-HpETE   317.1   155.0   20   10   21.10     12(5)-HpETE   317.1   155.0   30   14   21.13     8-HDOHE   343.1   189.0   35   15   21.16     9-HETE   319.1   167.0   35   15   21.15     12-KETE   319.1   167.0   35   15   21.15     12-KETE   319.1   116.0   35   15   21.15     12-KETE   319.1   116.0   35   15   21.33     4-HDOHE   343.1   241.1   25   10   21.56     19(20)-EpDPE   343.1   241.1   25   10   21.56     5-HpETE   317.1   203.0   30   16   21.64     12(13)-EpDME   295.1   195.0   25   13   21.66     14(15)-EET   319.1   155.0   25   14   21.84     16(17)-EpDPE   343.1   133.1   25   10   21.85     10(11)-EpDPE   343.1   100.0   25   12   22.02     5-KETE   317.1   203.0   30   17   22.07     11(12)-EET   319.1   155.0   25   22.25     7(8)-EpDPE   343.1   100.0   25   12   22.08     7(8)-EpDPE   343.1   100.0   25   22.88     7(8)-EpDPE   343.1   100.0   25   22.88					10000	
15-HpETE 317.1 113.0 30 16 20.75 14-HDoHE 343.1 205.0 35 15 20.75 10-HDoHE 343.1 153.0 35 15 20.81 15-KETE 317.1 113.0 30 17 20.83 114(15)-EPETE 317.1 120.0 20 10 20.90 9-KODE 293.1 185.0 30 17 20.90 11-HDoHE 343.1 149.0 35 15 20.93 12-HETE 319.1 179.0 30 12 20.97 11(12)-EPETE 317.1 167.0 20 10 21.00 8-HETE 319.1 167.0 20 10 21.00 8-HETE 319.1 155.0 35 14 21.00 7-HDoHE 343.1 141.0 35 15 12.06 15(S)-HETE 321.1 221.1 36 15 21.08 8(9)-EPETE 317.1 155.0 20 10 21.10 12(S)-HpETE 317.1 155.0 20 10 21.10 12(S)-HpETE 319.1 155.0 35 15 21.08 8(9)-EPETE 317.1 153.0 30 14 21.13 8-HDoHE 343.1 189.0 35 15 21.15 9-HETE 319.1 167.0 35 15 21.15 12-KETE 319.1 167.0 35 15 21.16 9-HETE 319.1 167.0 35 15 21.16 12-KETE 319.1 115.0 35 10 21.33 4-HDOHE 343.1 101.0 35 15 21.16 19(20)-EPDPE 343.1 241.1 25 10 21.56 5-HpETE 319.1 155.0 25 13 21.66 19(20)-EPDPE 343.1 241.1 25 10 21.56 5-HpETE 319.1 195.0 25 13 21.66 14(15)-EET 319.1 195.0 25 14 21.84 14(15)-EET 319.1 193.1 25 10 21.92 10(11)-EPDPE 343.1 193.1 25 10 21.92 10(11)-EPDPE 343.1 193.1 25 10 21.85 13(14)-EPDPE 343.1 193.1 25 10 22.08 7(8)-EPDPE 343.1 195.0 25 12 22.08						
14-HDoHE 343.1 205.0 35 15 20.81 15 20.75 10-HDoHE 343.1 153.0 35 15 20.81 15-KETE 317.1 113.0 30 17 20.83 14(15)-EpETE 317.1 207.0 20 10 20.90 9-KODE 293.1 185.0 30 17 20.90 11-HDOHE 343.1 149.0 35 15 20.93 12-HETE 319.1 179.0 30 12 20.97 11(12)-EpETE 319.1 179.0 30 12 20.97 11(12)-EpETE 319.1 167.0 20 10 21.00 8-HETE 319.1 155.0 35 14 21.00 7-HDOHE 343.1 141.0 35 15 21.08 8(9)-EpETE 317.1 155.0 35 15 21.08 8(9)-EpETE 317.1 153.0 30 14 21.00 21.10 21.10 21.00 12(S)-HPETE 317.1 153.0 30 14 21.13 8-HDOHE 343.1 189.0 35 15 21.15 9-HETE 319.1 167.0 36 15 21.15 9-HETE 319.1 167.0 36 15 21.16 15 2						
10-HDoHE					the second secon	
14(16)-EPETE 317.1 207.0 20 10 20.90 9-KODE 293.1 185.0 30 17 20.90 11-HD0HE 343.1 149.0 35 15 20.93 12-HETE 319.1 179.0 30 12 20.97 11(12)-EPETE 317.1 167.0 20 10 21.00 8-HETE 319.1 155.0 35 14 21.00 7-HD0HE 343.1 141.0 35 15 21.06 15(S)-HETRE 321.1 221.1 35 15 21.06 15(S)-HETRE 317.1 155.0 20 10 21.10 12(S)-HDETE 317.1 155.0 20 10 21.10 12(S)-HDETE 317.1 153.0 30 14 21.13 8-HD0HE 343.1 189.0 35 15 21.15 9-HETE 319.1 167.0 35 15 21.15 12-KETE 319.1 155.0 30 17 21.24 5-HETE 319.1 155.0 30 17 21.24 5-HETE 319.1 150.0 35 15 21.15 12-KETE 319.1 150.0 35 15 21.15 12-KETE 319.1 150.0 35 15 21.16 19(20)-EDDPE 343.1 241.1 25 10 21.33 4-HD0HE 343.1 101.0 35 15 21.56 19(20)-EDDPE 343.1 241.1 25 10 21.56 19(20)-EDDPE 343.1 241.1 25 10 21.56 19(20)-EDDPE 343.1 295.1 195.0 25 13 21.66 14(15)-EET 319.1 219.0 50 8 21.72 9(10)-EDOME 295.1 195.0 25 13 21.66 14(15)-EET 319.1 193.1 25 10 21.85 13(14)-EDDPE 343.1 193.1 25 10 21.85 13(14)-EDDPE 343.1 193.1 25 10 21.92 10(11)-EDDPE 343.1 193.1 25 10 22.02 11(12)-EET 319.1 167.0 45 10 22.08 18(9)-EET 319.1 155.0 42 8 22.25		343.1			15	
9-KODE 293.1 185.0 30 17 20.90 11-HD0HE 343.1 149.0 35 15 20.93 12-HETE 319.1 179.0 30 12 20.97 11(12)-EPETE 317.1 167.0 20 10 21.00 8-HETE 319.1 155.0 35 14 21.00 7-HD0HE 343.1 141.0 35 15 21.06 15(S)-HETRE 321.1 221.1 35 15 21.08 8(9)-EPETE 317.1 155.0 20 10 21.10 12(S)-HPETE 317.1 155.0 20 10 21.10 12(S)-HPETE 317.1 155.0 20 10 21.10 12(S)-HPETE 317.1 153.0 30 14 21.13 8-HD0HE 343.1 189.0 35 15 21.15 9-HETE 319.1 167.0 35 15 21.15 12-KETE 317.1 153.0 30 17 21.24 5-HETE 319.1 167.0 35 15 21.15 12-KETE 319.1 110.0 35 15 21.16 19(20)-EPDPE 343.1 241.1 25 10 21.33 4-HD0HE 343.1 101.0 35 15 21.56 19(20)-EPDPE 343.1 241.1 25 10 21.56 19(20)-EPDPE 343.1 241.1 25 10 21.56 19(20)-EPDPE 343.1 241.1 25 10 21.56 14(15)-EET 319.1 195.0 25 13 21.66 14(15)-EET 319.1 219.0 50 8 21.72 9(10)-EPOME 295.1 171.0 25 14 21.84 16(17)-EPDPE 343.1 133.1 25 10 21.85 13(14)-EPDPE 343.1 153.1 25 12 22.02 5-KETE 37.1 203.0 30 17 22.07 11(12)-EET 319.1 167.0 45 10 22.08 7(8)-EPDPE 343.1 109.0 25 12 22.18 8(9)-EET 319.1 155.0 42 8 22.25						
11-HDoHE   343.1   149.0   35   15   20.93     12-HETE   319.1   179.0   30   12   20.97     11(12)-EPETE   317.1   167.0   20   10   21.00     8-HETE   319.1   155.0   35   14   21.00     7-HDoHE   343.1   141.0   35   15   21.06     15(S)-HETE   317.1   155.0   20   10   21.10     16(S)-HETE   317.1   155.0   20   10   21.10     12(S)-HpETE   317.1   155.0   30   14   21.13     8-HDoHE   343.1   189.0   35   15   21.16     9-HETE   319.1   167.0   35   15   21.15     12-KETE   317.1   153.0   30   17   21.24     5-HETE   319.1   116.0   35   15   21.15     12-KETE   319.1   116.0   35   10   21.33     4-HDOHE   343.1   101.0   35   15   21.66     19(20)-EpDPE   343.1   241.1   25   10   21.56     5-HpETE   317.1   203.0   30   16   21.64     12(13)-EpOME   295.1   195.0   25   13   21.66     14(15)-EET   319.1   213.1   225   10   21.85     13(14)-EpDPE   343.1   233.1   25   10   21.85     13(14)-EpDPE   343.1   193.1   25   10   21.92     10(11)-EpDPE   343.1   193.1   25   10   21.92     10(11)-EpDPE   343.1   193.1   25   10   22.08     7(8)-EpDPE   343.1   100.0   25   12   22.02     5-KETE   319.1   167.0   45   10   22.08     7(8)-EpDPE   343.1   109.0   25   12   22.18     8(9)-EET   319.1   155.0   42   8   22.25	the state of the s					
12-HETE   319.1   179.0   30   12   20.97						
11(12)-EPETE   317.1   167.0   20   10   21.00						
8-HÉTE       319.1       155.0       35       14       21.00         7-HDOHE       343.1       141.0       35       15       21.08         15(S)-HETIE       321.1       221.1       35       15       21.08         8(9)-EPETE       317.1       155.0       20       10       21.10         12(S)-HPETE       317.1       153.0       30       14       21.13         8-HDOHE       343.1       189.0       35       15       21.15         9-HETE       319.1       167.0       35       15       21.15         12-KETE       317.1       153.0       30       17       21.24         5-HETE       319.1       115.0       35       10       21.33         4-HDOHE       343.1       101.0       35       10       21.33         4-HDOHE       343.1       101.0       35       15       21.56         19(20)-EpDPE       343.1       241.1       25       10       21.56         19(20)-EpDPE       343.1       241.1       25       10       21.56         19(20)-EpDME       295.1       195.0       25       13       21.66         12(3)-EpDME						
7-HDoHE 343.1 141.0 35 15 21.06 15(S)-HETE 321.1 221.1 35 16 21.08 8(9)-EPETE 317.1 155.0 20 10 21.10 12(S)-HpETE 317.1 153.0 30 14 21.13 8-HDoHE 343.1 189.0 35 15 21.15 9-HETE 319.1 167.0 35 15 21.15 12-KETE 319.1 115.0 35 10 21.33 4-HDoHE 343.1 115.0 35 10 21.33 4-HDoHE 343.1 115.0 35 10 21.33 4-HDoHE 343.1 101.0 35 10 21.33 4-HDOHE 343.1 101.0 35 15 21.56 19(20)-EpDPE 343.1 241.1 25 10 21.56 5-HpETE 317.1 203.0 30 16 21.66 12(3)-EpOME 295.1 195.0 25 13 21.66 14(15)-EET 319.1 219.0 50 8 21.72 9(10)-EpOME 295.1 171.0 25 14 21.84 16(17)-EpDPE 343.1 233.1 25 10 21.85 13(14)-EpDPE 343.1 193.1 25 10 21.85 13(14)-EpDPE 343.1 193.1 25 10 21.85 13(14)-EpDPE 343.1 193.1 25 10 21.92 10(11)-EpDPE 343.1 193.1 25 10 21.92 5-KETE 317.1 203.0 30 17 22.07 11(12)-EET 319.1 167.0 45 10 22.08 7(8)-EpDPE 343.1 109.0 25 12 22.08 8(9)-EET 319.1 155.0 42 8 22.25						
15(S)-HETRE   321.1   221.1   35   15   21.08						
8(9)-EPETE       317.1       155.0       20       10       21.10         12(5)-HPETE       317.1       153.0       30       14       21.13         8-HDOHE       343.1       189.0       35       15       21.15         9-HETE       319.1       167.0       35       15       21.15         12-KETE       317.1       153.0       30       17       21.24         5-HETE       319.1       115.0       35       10       21.33         4-HDOHE       343.1       101.0       35       15       21.56         19(20)-EpDPE       343.1       241.1       25       10       21.56         5-HPETE       317.1       203.0       30       16       21.64         12(13)-EpOME       295.1       195.0       25       13       21.66         14(15)-EET       319.1       219.0       50       8       21.72         9(10)-EpOME       295.1       171.0       25       14       21.84         16(17)-EpDPE       343.1       233.1       25       10       21.82         13(14)-EpDPE       343.1       193.1       25       10       21.92         10(11)-EpD						4
12(S)-HpETE     317.1     153.0     30     14     21.13       8-HDOHE     343.1     189.0     35     15     21.15       9-HETE     319.1     167.0     35     15     21.15       12-KETE     317.1     153.0     30     17     21.24       5-HETE     319.1     115.0     35     10     21.33       4-HDOHE     343.1     101.0     35     15     21.56       19(20)-EpDPE     343.1     241.1     25     10     21.56       5-HPETE     317.1     203.0     30     16     21.64       12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     193.1     25     10     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.28						
9-HETE 319.1 167.0 35 15 21.15  12-KETE 317.1 153.0 30 17 21.24  5-HETE 319.1 115.0 35 10 21.33  4-HDoHE 343.1 101.0 35 15 21.56  19(20)-EpDPE 343.1 241.1 25 10 21.56  5-HpETE 317.1 203.0 30 16 21.64  12(13)-EpOME 295.1 195.0 25 13 21.66  14(15)-EET 319.1 219.0 50 8 21.72  9(10)-EpOME 295.1 171.0 25 14 21.84  16(17)-EpDPE 343.1 233.1 25 10 21.85  13(14)-EpDPE 343.1 193.1 25 10 21.92  10(11)-EpDPE 343.1 153.1 25 12 22.02  5-KETE 317.1 203.0 30 17 22.07  11(12)-EET 319.1 167.0 45 10 22.08  7(8)-EpDPE 343.1 109.0 25 12 22.08  8(9)-EET 319.1 109.0 25 12 22.18  8(9)-EET 319.1 109.0 25 12 22.18	12(S)-HpETE					
12-KETE     317.1     153.0     30     17     21.24       5-HETE     319.1     115.0     35     10     21.33       4-HDOHE     343.1     101.0     35     15     21.56       19(20)-EpDPE     343.1     241.1     25     10     21.56       5-HPETE     317.1     203.0     30     16     21.64       12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.08       8(9)-EET     319.1     155.0     42     8     22.25						
5-HETE         319.1         115.0         35         10         21.33           4-HDOHE         343.1         101.0         35         15         21.56           19(20)-EpDPE         343.1         241.1         25         10         21.56           5-HPETE         317.1         203.0         30         16         21.64           12(13)-EpOME         295.1         195.0         25         13         21.66           14(15)-EET         319.1         219.0         50         8         21.72           9(10)-EpOME         295.1         171.0         25         14         21.84           16(17)-EpDPE         343.1         233.1         25         10         21.84           13(14)-EpDPE         343.1         193.1         25         10         21.92           10(11)-EpDPE         343.1         153.1         25         12         22.02           5-KETE         317.1         203.0         30         17         22.07           11(12)-EET         319.1         167.0         45         10         22.08           7(8)-EpDPE         343.1         109.0         25         12         22.18 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
4-HDoHE     343.1     101.0     35     15     21.56       19(20)-EpDPE     343.1     241.1     25     10     21.56       5-HPETE     317.1     203.0     30     16     21.64       12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
19(20)-EpDPE     343.1     241.1     25     10     21.56       5-HpETE     317.1     203.0     30     16     21.64       12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
5-HpETE     317.1     203.0     30     16     21.64       12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
12(13)-EpOME     295.1     195.0     25     13     21.66       14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
14(15)-EET     319.1     219.0     50     8     21.72       9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.92       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
9(10)-EpOME     295.1     171.0     25     14     21.84       16(17)-EpDPE     343.1     233.1     25     10     21.85       13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
13(14)-EpDPE     343.1     193.1     25     10     21.92       10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25	9(10)-EpOME	295.1	171.0	25	14	21.84
10(11)-EpDPE     343.1     153.1     25     12     22.02       5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25					till till till till till till till till	
5-KETE     317.1     203.0     30     17     22.07       11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25						
11(12)-EET     319.1     167.0     45     10     22.08       7(8)-EpDPE     343.1     109.0     25     12     22.18       8(9)-EET     319.1     155.0     42     8     22.25					11500	
7(8)-EpDPE 343.1 109.0 25 12 22.18 8(9)-EET 319.1 155.0 42 8 22.25						
8(9)-EET 319.1 155.0 42 8 22.25						

© 2021 Waters Corporation. All Rights Reserved.