

ANTIDEPRESSANTS IN PLASMA BY LC/MS

Code LC84010





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This product fulfills all the requirements of Directive 98/79/EC on in vitro diagnostic medical devices (IVD).

The declaration of conformity (CE) is available upon request.

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INTRODUCTION

Antidepressants are a class of medications used in emotional and mood disorders, which can evolve into psychosis and other symptoms such as anhedonia, self-devaluation, indecision, lack of appetite, hyperphagia, insomnia, hypersomnia, recurring thoughts of suicide or murder and somatization of pain.

These drugs are divided into various classes according to their mechanism of action:

- MAOIs (monoamine oxidase inhibitors);
- TCA (tricyclic antidepressants);
- SSRIs (selective serotonin reuptake inhibitors);
- SNRI (serotonin and norepinephrine reuptake inhibitors);
- NARI (noradrenaline reuptake inhibitors);
- NDRI (dopamine and noradrenaline reuptake inhibitors);
- DRI (dopamine reuptake inhibitors);
- SSRE (serotonergic drugs);
- NASSA (specific noradrenergic and serotonergic antidepressants);
- Melatonergic drugs.

Given the large number of antidepressants on the market and their increasing use, there is a need for physicians to monitor their plasma concentration in order to avoid episodes of overdose.

This method allows the determination of a number of antidepressant drugs and their main active metabolites: amitriptyline, nortriptyline, clomipramine, norclomipramine, desipramine, desvenlafaxine, doxepine, nordoxepine, duloxetine, fluoxetine, norfluoxetine, fluvoxamine, imipramine, paroxetine, sertraline, venlafaxine, citalopram and escitalopram. Citalopram is a raceme, while escitalopram is the only enantiomer (S): this method allows the quantification of both drugs using escitalopram.

TECHNICAL FEATURES

RECOVERY:	99,0 – 112,9 %	
SENSITIVITY (LLOD):	Doxepine Nordoxepine Nortriptyline Amitriptyline Escitalopram Duloxetine Sertraline Paroxetine Imipramine Clomipramine Norclomipramine Desipramine Norfluoxetine Desvenlafaxine Venlafaxine Fluoxetine Fluvoxamine	0,66 ng/ml 0,66 ng/ml 0,66 ng/ml 0,66 ng/m 0,66 ng/ml 0,66 ng/ml 0,33 ng/ml 0,33 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml 1,66 ng/ml
MINIMUM CONCENTRATION ANALIZABLE (LLOQ):	Doxepine Nordoxepine Nortriptyline Amitriptyline Escitalopram Duloxetine Sertraline Paroxetine Imipramine Clomipramine Norclomipramine Desipramine Norfluoxetine Desvenlafaxine Venlafaxine Fluoxetine Fluvoxamine	2 ng/ml 2 ng/ml 2 ng/ml 2 ng/m 2 ng/ml 2 ng/ml 1 ng/ml 1 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml 5 ng/ml
LINEARITY:	Doxepine Nordoxepine Nortriptyline Amitriptyline Escitalopram Duloxetine Sertraline Paroxetine Imipramine Clomipramine Norclomipramine Desipramine Norfluoxetine Desvenlafaxine Venlafaxine Fluoxetine Fluvoxamine	2 - 640 ng/ml 2 - 640 ng/ml 2 - 640 ng/ml 2 - 640 ng/m 2 - 640 ng/ml 2 - 640 ng/ml 1 - 320 ng/ml 1 - 320 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml 5 – 1.600 ng/ml

Drugs and metabolites	Reference Therapeutic Range (ng/mL)	Alert level (ng/mL)
Amitriptiline + nortriptiline	80-200	300
Citalopram	50-110	220
Clomipramine + norclomipramine	230-450	450
Desipramine	100-300	300
Desvenlafaxine	100-400	800
Doxepine + nordoxepine	50-150	300
Duloxetine	30-120	240
Escitalopram (enantiomer (S) of citalopram)	15-80	160
Fluoxetine + norfluoxetine	120-500	1000
Fluvoxamine	60-230	500
Imipramine + desipramine	175-300	300
Nortriptyline	70-170	300
Paroxetine	20-65	120
Sertraline	10-150	300
Venlafaxine + norvenlafaxine	100-400	800

Accuracy intra serie (relative error %)

Doxepine:

Ci	Cs
20 ng/ml	160 ng/ml
2,46%	2,92%

Accuracy inter serie (relative error %)

Doxepine:

Ci	Cs
20 ng/ml	160 ng/ml
6,09%	2,58%

Reproducibility intra serie (coefficient of variation %)

Doxepine:

C LLOQ	Cm	CUP
2 ng/ml	40 ng/ml	320 ng/ml
7,61%	1,29%	2,09%

Reproducibility inter serie (coefficient of variation %)

Doxepine:

C LLOQ	Cm	CUP
2 ng/ml	40 ng/ml	320 ng/ml
12,72%	5,41%	3,66%

Coefficient of Correlation R2 + Dev Std:

0,9992 ± 0,0004 Doxepine

Accuracy intra serie (relative error %)

Nordoxepine:

Ci	Cs
20 ng/ml	160 ng/ml
3,04%	2,61%

<u>Accuracy inter serie (relative error %)</u> <u>Nordoxepine:</u>	Ci	Cs	
	20 ng/ml	160 ng/ml	
	7,44%	3,25%	
<u>Reproducibility intra serie (coefficient of variation %)</u> <u>Nordoxepine:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	2,58%	1,29%	2,22%
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Nordoxepine:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	12,99%	4,04%	4,72%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9992 ± 0,0005 Nordoxepine		
<u>Accuracy intra serie (relative error %)</u> <u>Nortriptyline:</u>	Ci	Cs	
	20 ng/ml	160 ng/ml	
	2,44%	0,85%	
<u>Accuracy inter serie (relative error %)</u> <u>Nortriptyline:</u>	Ci	Cs	
	20 ng/ml	160 ng/ml	
	4,11%	2,09%	
<u>Reproducibility intra serie (coefficient of variation %)</u> <u>Nortriptyline:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	3,80%	2,97%	3,49%
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Nortriptyline:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	8,76%	8,08%	4,99%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9991 ± 0,0012 Nortriptyline		
<u>Accuracy intra serie (relative error %)</u> <u>Amitriptyline:</u>	Ci	Cs	
	20 ng/ml	160 ng/ml	
	5,34%	3,83%	
<u>Accuracy inter serie (relative error %)</u> <u>Amitriptyline:</u>	Ci	Cs	
	20 ng/ml	160 ng/ml	
	8,06%	2,50%	
<u>Reproducibility intra serie (coefficient of variation %)</u> <u>Amitriptyline:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	5,87%	1,06%	2,22%
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Amitriptyline:</u>	C LLOQ	Cm	CUP
	2 ng/ml	40 ng/ml	320 ng/ml
	11,68%	4,56%	2,42%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9995 ± 0,0003 Amitriptyline		

<u>Accuracy intra serie (relative error %)</u> <u>Escitalopram:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>20 ng/ml</td><td>160 ng/ml</td></tr><tr><td>1,51%</td><td>2,05%</td></tr></table>	Ci	Cs	20 ng/ml	160 ng/ml	1,51%	2,05%			
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C LLOQ	Cm	CUP								
2 ng/ml	40 ng/ml	320 ng/ml								
8,15%	6,00%	5,02%								
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9991 ± 0,0007 Escitalopram									
<u>Accuracy intra serie (relative error %)</u> <u>Duloxetine:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>20 ng/ml</td><td>160 ng/ml</td></tr><tr><td>2,28%</td><td>3,88%</td></tr></table>	Ci	Cs	20 ng/ml	160 ng/ml	2,28%	3,88%			
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C LLOQ	Cm	CUP								
2 ng/ml	40 ng/ml	320 ng/ml								
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<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9992 ± 0,0005 Duloxetine									
<u>Accuracy intra serie (relative error %)</u> <u>Sertraline:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>10 ng/ml</td><td>80 ng/ml</td></tr><tr><td>1,36%</td><td>3,30%</td></tr></table>	Ci	Cs	10 ng/ml	80 ng/ml	1,36%	3,30%			
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C LLOQ	Cm	CUP								
1 ng/ml	20 ng/ml	160 ng/ml								
3,43%	1,42%	2,70%								

<u>Reproducibility inter serie (coefficient of variation %)</u> Sertraline:	C LLOQ	Cm	CUP
	1 ng/ml	20 ng/ml	160 ng/ml
	11,01%	5,10%	2,96%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9994 ± 0,0002 Sertraline		
<u>Accuracy intra serie (relative error %)</u> Paroxetine:	Ci	Cs	
	10 ng/ml	80 ng/ml	
	1,96%	2,32%	
<u>Accuracy inter serie (relative error %)</u> Paroxetine:	Ci	Cs	
	10 ng/ml	80 ng/ml	
	6,31%	2,55%	
<u>Reproducibility intra serie (coefficient of variation %)</u> Paroxetine:	C LLOQ	Cm	CUP
	1 ng/ml	20 ng/ml	160 ng/ml
	4,39%	3,49%	4,24%
<u>Reproducibility inter serie (coefficient of variation %)</u> Paroxetine:	C LLOQ	Cm	CUP
	1 ng/ml	20 ng/ml	160 ng/ml
	7,50%	5,36%	4,47%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9989 ± 0,0008 Paroxetine		
<u>Accuracy intra serie (relative error %)</u> Imipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	4,85%	3,27%	
<u>Accuracy inter serie (relative error %)</u> Imipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	6,19%	2,43%	
<u>Reproducibility intra serie (coefficient of variation %)</u> Imipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	2,03%	2,57%	3,20%
<u>Reproducibility inter serie (coefficient of variation %)</u> Imipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	13,38%	4,66%	2,75%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9992 ± 0,0002 Imipramine		
<u>Accuracy intra serie (relative error %)</u> Norclomipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	5,22%	1,23%	
<u>Accuracy inter serie (relative error %)</u> Norclomipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	6,87%	2,04%	

<u>Reproducibility intra serie (coefficient of variation %)</u> Norclomipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	2,95%	2,34%	2,83%
<u>Reproducibility inter serie (coefficient of variation %)</u> Norclomipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	8,50%	4,97%	3,31%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9994 ± 0,0004 Norclomipramine		
<u>Accuracy intra serie (relative error %)</u> Clomipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	3,37%	1,35%	
<u>Accuracy inter serie (relative error %)</u> Clomipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	5,30%	2,69%	
<u>Reproducibility intra serie (coefficient of variation %)</u> Clomipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	4,88%	3,43%	4,03%
<u>Reproducibility inter serie (coefficient of variation %)</u> Clomipramine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	10,94%	8,58%	4,64%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9991 ± 0,0003 Clomipramine		
<u>Accuracy intra serie (relative error %)</u> Norfluoxetine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	3,11%	4,07%	
<u>Accuracy inter serie (relative error %)</u> Norfluoxetine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	6,57%	3,36%	
<u>Reproducibility intra serie (coefficient of variation %)</u> Norfluoxetine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	4,09%	2,81%	2,19%
<u>Reproducibility inter serie (coefficient of variation %)</u> Norfluoxetine:	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	14,98%	8,17%	4,02%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9992 ± 0,0002 Norfluoxetine		
<u>Accuracy intra serie (relative error %)</u> Desipramine:	Ci	Cs	
	50 ng/ml	400 ng/ml	
	1,87%	1,17%	

<u>Accuracy inter serie (relative error %)</u> <u>Desipramine:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>50 ng/ml</td><td>400 ng/ml</td></tr><tr><td>4,88%</td><td>3,18%</td></tr></table>	Ci	Cs	50 ng/ml	400 ng/ml	4,88%	3,18%			
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9,86%	8,24%	5,59%								
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9988 ± 0,0009 Desipramine									
<u>Accuracy intra serie (relative error %)</u> <u>Desvenlafaxine:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>50 ng/ml</td><td>400 ng/ml</td></tr><tr><td>9,61%</td><td>3,85%</td></tr></table>	Ci	Cs	50 ng/ml	400 ng/ml	9,61%	3,85%			
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6,94%	3,30%	2,50%								
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9977 ± 0,0019 Desvenlafaxine									
<u>Accuracy intra serie (relative error %)</u> <u>Venlafaxine:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>50 ng/ml</td><td>400 ng/ml</td></tr><tr><td>2,93%</td><td>1,20%</td></tr></table>	Ci	Cs	50 ng/ml	400 ng/ml	2,93%	1,20%			
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5 ng/ml	100 ng/ml	800 ng/ml								
4,91%	2,09%	5,70%								
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Venlafaxine:</u>	<table><tr><td>C LLOQ</td><td>Cm</td><td>CUP</td></tr><tr><td>5 ng/ml</td><td>100 ng/ml</td><td>800 ng/ml</td></tr><tr><td>12,12%</td><td>7,52%</td><td>5,97%</td></tr></table>	C LLOQ	Cm	CUP	5 ng/ml	100 ng/ml	800 ng/ml	12,12%	7,52%	5,97%
C LLOQ	Cm	CUP								
5 ng/ml	100 ng/ml	800 ng/ml								
12,12%	7,52%	5,97%								
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9987 ± 0,0008 Venlafaxine									
<u>Accuracy intra serie (relative error %)</u> <u>Fluoxetine:</u>	<table><tr><td>Ci</td><td>Cs</td></tr><tr><td>50 ng/ml</td><td>400 ng/ml</td></tr><tr><td>2,77%</td><td>3,40%</td></tr></table>	Ci	Cs	50 ng/ml	400 ng/ml	2,77%	3,40%			
Ci	Cs									
50 ng/ml	400 ng/ml									
2,77%	3,40%									

<u>Accuracy inter serie (relative error %)</u> <u>Fluoxetine:</u>	Ci	Cs	
	50 ng/ml	400 ng/ml	
	4,54%	3,71%	
<u>Reproducibility intra serie (coefficient of variation %)</u> <u>Fluoxetine:</u>	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	2,93%	2,60%	1,82%
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Fluoxetine:</u>	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	9,98%	7,14%	3,49%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9989 ± 0,0004 Fluoxetine		
<u>Accuracy intra serie (relative error %)</u> <u>Fluvoxamine:</u>	Ci	Cs	
	50 ng/ml	400 ng/ml	
	1,78%	1,17%	
<u>Accuracy inter serie (relative error %)</u> <u>Fluvoxamine:</u>	Ci	Cs	
	50 ng/ml	400 ng/ml	
	5,82%	1,04%	
<u>Reproducibility intra serie (coefficient of variation %)</u> <u>Fluvoxamine:</u>	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	8,20%	3,61%	3,08%
<u>Reproducibility inter serie (coefficient of variation %)</u> <u>Fluvoxamine:</u>	C LLOQ	Cm	CUP
	5 ng/ml	100 ng/ml	800 ng/ml
	12,40%	11,73%	6,68%
<u>Coefficient of Correlation R2 + Dev Std:</u>	0,9993 ± 0,0007 Fluvoxamine		

COMPONENTS OF THE KITS (100 TESTS)

Reagent A – Deproteinization Solution + Internal Std	1 x 30 ml	Store at -20 °C
Reagent B – Diluting Solution	1 x 25 ml	
Plasma Calibrator – Level 0	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 1	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 2	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 3	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 4	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 5	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Plasma Calibrator – Level 6	1 x 1 ml	Code LC84016 (Packed separately – see data sheets)
Reagent M1 – Mobile Phase M1	1 x 500 ml	
Reagent M2 – Mobile Phase M2	2 x 500 ml	

All reagents are ready to use and stable for 3 years at 2-8 °C, except Reagent A which should be stored at -20 °C. The storage procedure for the Lyophilic Calibration Standard is described in the dedicated data sheet.

Bibliography

1-(*) Consensus Guidelines for Therapeutic Drug Monitoring in Neuropsychopharmacology: Update 2017

ACCESSORIES AND CONSUMABLES

CODE	DESCRIPTION	PACKAGING
LC84016	Calibrator in plasma for Antidepressants	7 x 2 x 1 ml
LC84019	Control in plasma for Antidepressants - Levels 1, 2 and 3	3 x 5 x 1 ml
SK84010	Starter kit for Antidepressants in plasma	1 Pc
Z699675902	Poroshell 120 EC-C18 (50 x 2,1 mm, 1,9 µm) Analytical Column	1 Pc

MINIMUM INSTRUMENTAL EQUIPMENT REQUIRED

LC-MS/MS Triple Quadrupole
MRM mode, ESI positive

OPTIONAL EQUIPMENT

Autosampler
Operational Computer

MODE OF WHOLE BLOOD COLLECTION

Take 3 ml of venous blood in a test tube without gel for serum or with Heparin as anticoagulant for plasma.

Centrifuge at 4000 rpm for 5 minutes.

Separate the serum and store at - 20 °C. Stable for 4 weeks.

ANALYTICAL PROCEDURE

STEP 1

Dispense in a eppendorf:

- 300 µl of **Reagent A – Deproteinization Solution + Internal Standards**
- 100 µl of **Calibrator (C0-C6)/Controls/Samples**

Vortex for 10 sec.

Centrifuge at 14.000 rpm for 10 minutes

STEP 2

Dispense in a vial with reduced form:

- 100 µl of **supernatant**
- 250 µl of **Reagent B – Diluting Solution**

Vortex for 5 sec.

N.B.: at this step, the sample is stable for 2 days at 2-8 °C

INJECTION

- Inject 2 µl of solution in HPLC.

ANTIDEPRESSANTS IN PLASMA by LC/MS - Warnings

COLUMN CONDITIONING

Install new analytical column Poroshell EC-C18 (50 x 2.1 mm, 1.9 µm) thermostated at 50°C. Disconnect the detector and flux for 10 minutes a solution of Mobile Phase M1 : Mobile Phase M2 (20 : 80 v/v) set flow at 500 µl/minute and the a solution of Mobile Phase M1 : Mobile Phase M2 (90 : 10 v/v) set flow at 500 µl/minute. **Don't recycle the washing solutions.** Condizionate the column with a solution of Mobile Phase M1 set flow at 500 µl/minute for 10 minutes.

It is NOT possible to make analysis at recycling phase.

If room temperature is > 20 °C store the Mobile Phase at 2-8 °C between an analytical session and another.

COLUMN CLEANING

Disconnect the detector. Flux a solution of Mobile Phase M1 : Mobile Phase M2 (30 : 70 v/v) for 10 minutes set flow at 500 µl/minute. The column must be stored in a solution of Mobile Phase M1 : Mobile Phase M2 (30 : 70 v/v).

INJECTION NEEDLE WASHING

Wash the syringe with a solution of Methanol : Water (75 : 25 v/v)

ESI+ PARAMETERS OPTIMIZED ON TRIPLE QUADRUPOLE SCIEX 4500

CUR	25
CAD	9
IS	5500
TEM	600
GS1	50
GS2	60

Fragmentations (optimized on TRIPLE QUADRUPOLE SCIEX 4500)

Analyte	Q1	Q3	IS recommended for calibration
Norclomipramine	301,1	72,2	Fluoxetine-D5
Paroxetine	330,1	192,2	Fluoxetine-D5
Sertraline	306,1	159	Sertraline-D3
Fluoxetine	310,1	44	Fluoxetine-D5
Duloxetine	298,1	44,1	Fluoxetine-D5
Escitalopram	325,1	109,1	Fluoxetina-D5
Fluvoxamine	319,2	258,1	Clomipramine-D6
Venlafaxine	278,2	58,1	Clomipramine-D6
Desvenlafaxine	264,1	58	Sertraline-D3
Norfluoxetine	296,1	134,2	Fluoxetine-D5
Clomipramine	315,1	242,1	Clomipramine-D6
Imipramine	281,1	208,1	Fluoxetine-D5
Amitriptyline	278,2	105,1	Fluoxetine-D5
Nortriptyline	264,2	233,1	Clomipramine-D6
Desipramine	267,1	208,1	Clomipramine-D6
Doxepine	280,1	235,1	Fluoxetine-D5
Nordoxepina	266,1	107,1	Fluoxetine-D5
Clomipramine-D6	321,1	92,1	
Fluoxetine-D5	315,1	153,1	
Sertraline-D3	309,1	159	

GRADIENT SET

Time (min)	% M1 (PUMP A)	% M2 (PUMP B)	FLOW (μl/min)
0	80	20	400
0.8	80	20	400
4.0	20	80	400
4.1	10	90	400
5.6	10	90	400
5.7	80	20	400
7.0	80	20	400

ANTIDEPRESSANTS IN PLASMA BY LC/MS

(Reference Chromatograms)

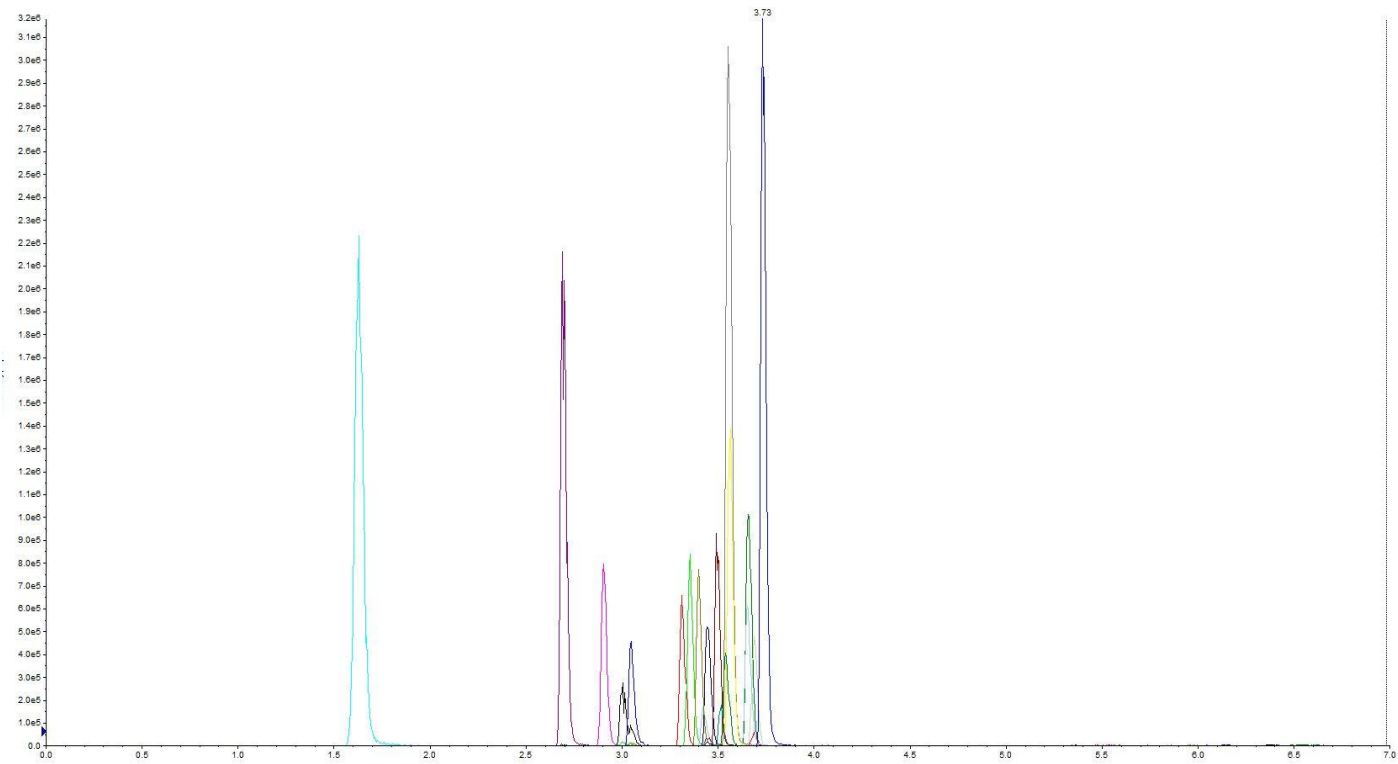


Fig. 1 :	Calibrator in plasma



eureka kit



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