

CNS agents monitoring

There are many different types of drugs that affect the central nervous system (CNS), including anesthetics, anticonvulsants, antiemetics, antiparkinson agents, CNS stimulants, muscle relaxants, narcotic analgesics and sedatives. Their control is important for therapeutic monitoring and in toxicologic purposes. The developed LC/MS method provides the accurate determination of a wide range of CNS agents.

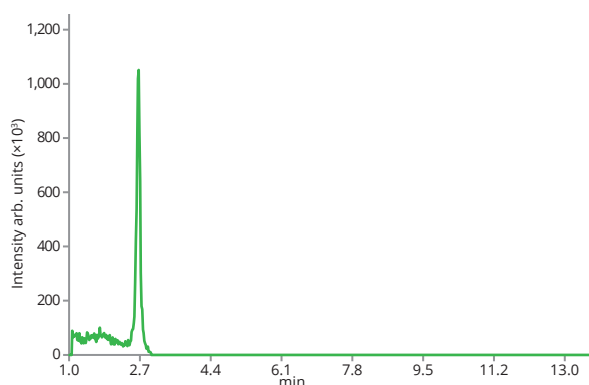
Column	ASTRA® C18-HE, 3.0 µm					
Dimensions	75 mm × 2.1 mm					
Part number	AST-5732-IH21					
Mobile phase	A: DDW + 0.1% Formic Acid B: ACN + 0.1% Formic Acid					
Gradient elution	Time	A (%)	B (%)	Time	A (%)	B (%)
	0	90	10	14	0	100
	1	90	10	14.01	90	10
	4	75	25	15	90	10
	8	60	40	17	90	10
	10	0	100			
Flow rate	0.35 mL/min					
Temperature	23 °C					
Detection	Full scan (resolving power 120 000, m/z 200), positive mode					
Injection volume	5 µL					
Analytes	Gabapentin, CAS number 60142-96-3 Terbutaline, CAS number 23031-25-6 10,11-dihydrocarbamazepine, CAS number 3564-73-6 Ropinirole, CAS number 91374-21-9 O-Desmethylenlafaxine (desvenlafaxine), CAS number 93413-62-8 Lamotrigine, CAS number 84057-84-1 Alfuzosin, CAS number 81403-80-7 Donepezil, CAS number 120014-06-4 Carbamazepine 10,11-epoxide (carbamazepine epoxide), CAS number 36507-30-9 Dihydroergotamine, CAS number 511-12-6 Desmethylicitalopram, CAS number 62498-67-3					

CNS agents monitoring

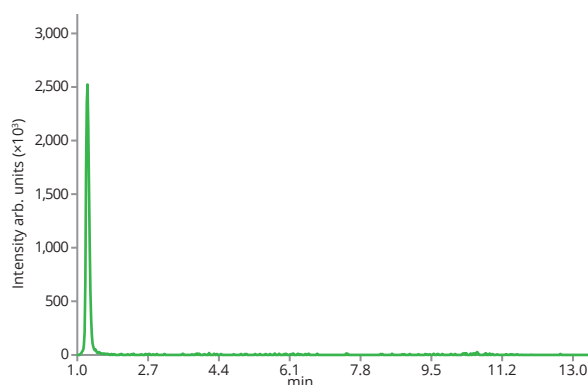
Analytes

12. **Citalopram**, CAS number 59729-33-8
13. **Mianserin**, CAS number 24219-97-4
14. **Haloperidol**, CAS number 52-86-8
15. **Paroxetine**, CAS number 61869-08-7
16. **Biperiden**, CAS number 514-65-8
17. **Orphenadrine**, CAS number 83-98-7
18. **Carbamazepine**, CAS number 298-46-4
19. **Hydroxyzine**, CAS number 68-88-2
20. **Trihexyphenidyl**, CAS number 144-11-6
21. **Vortioxetine**, CAS number 508233-74-7
22. **Oxazepam**, CAS number 604-75-1
23. **Cyproheptadine**, CAS number 129-03-3
24. **Diclofenac**, CAS number 15307-86-5
25. **Pizotifen (pizotyline)**, CAS number 15574-96-6
26. **Levomepromazine**, CAS number 60-99-1
27. **Amitriptyline**, CAS number 50-48-6
28. **Maprotiline**, CAS number 10262-69-8
29. **Venlafaxine**, CAS number 93413-69-5
30. **Nefazodone**, CAS number 83366-66-9
31. **Sertraline**, CAS number 79617-96-2
32. **Chlorpromazine**, CAS number 50-53-3
33. **Chlorprothixene**, CAS number 113-59-7
34. **Clomipramine**, CAS number 303-49-1
35. **Clonazepam**, CAS number 1622-61-3
36. **Loperamide**, CAS number 53179-11-6
37. **Clemastine**, CAS number 15686-51-8
38. **Dicycloverine (dicyclomine)**, CAS number 77-19-0
39. **Meclizine**, CAS number 569-65-3
40. **Alprazolam**, CAS number 28981-97-7
41. **Trazodone**, CAS number 19794-93-5
42. **Amisulpride**, CAS number 71675-85-9
43. **Duloxetine**, CAS number 116539-59-4
44. **Cetirizine**, CAS number 83881-51-0
45. **Fexofenadine**, CAS number 83799-24-0
46. **Memantine**, CAS number 19982-08-2
47. **rac trans-10,11-Dihydro-10,11-dihydroxy Carbamazepine**, CAS number 176486-10-5
48. **Primidone**, CAS number 125-33-7

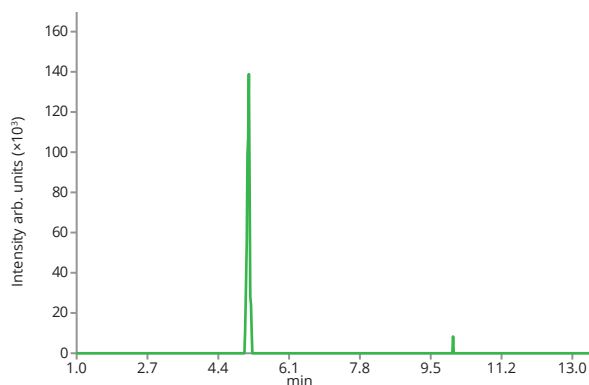
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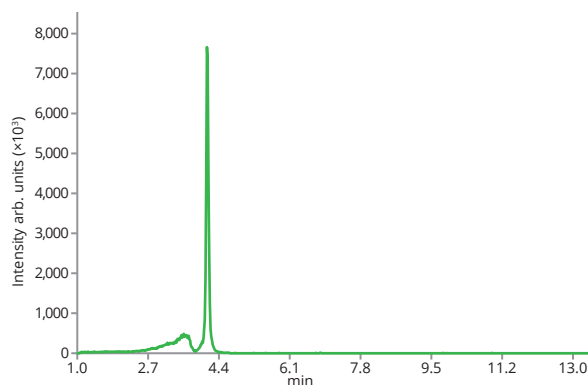
Gabapentin RT: 2.58, m/z 172.1332



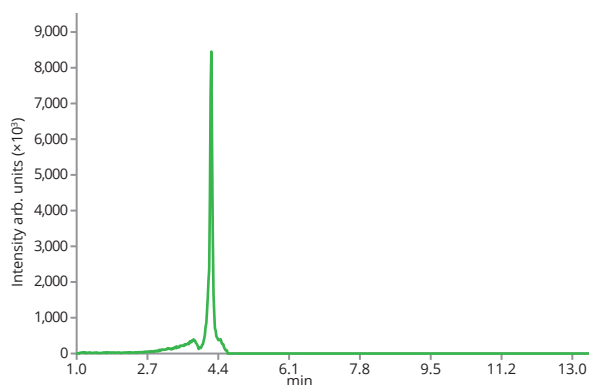
Terbutaline RT: 1.24, m/z 226.1443



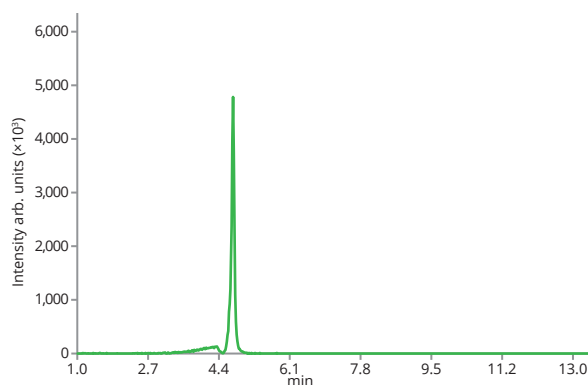
10,11-dihydrocarbamazepine RT: 7.2, m/z 239.1184



Ropinirole RT: 4.13, m/z 261.1967

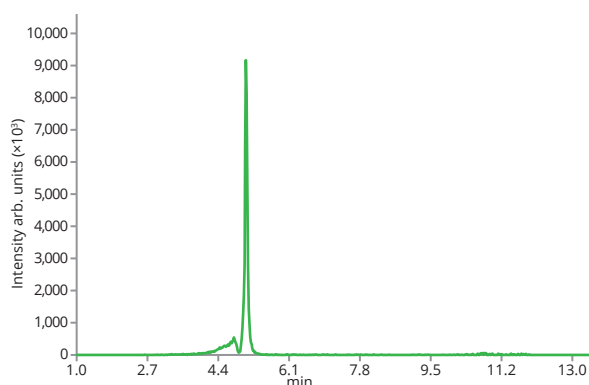


O-Desmethylvenlafaxine RT: 4.25, m/z 264.1963

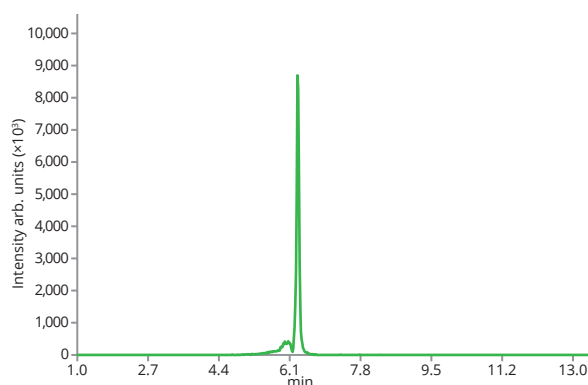


Lamotrigine RT: 4.74, m/z 256.0157

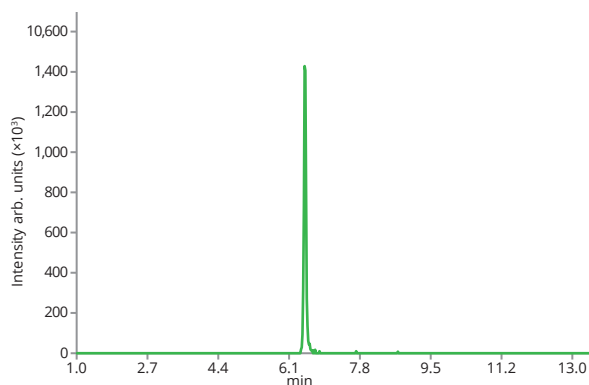
CNS agents monitoring



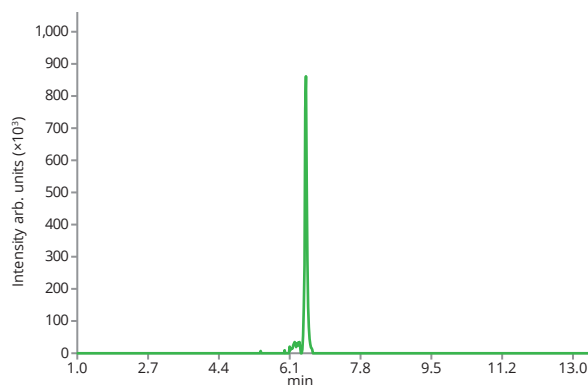
Alfuzosin RT: 5.08, m/z 390.2141



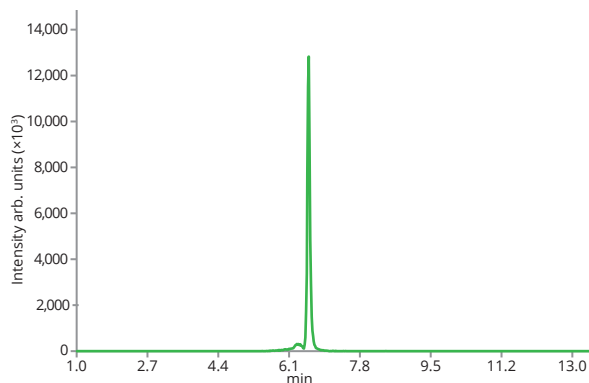
Donepezil RT: 6.32, m/z 380.2225



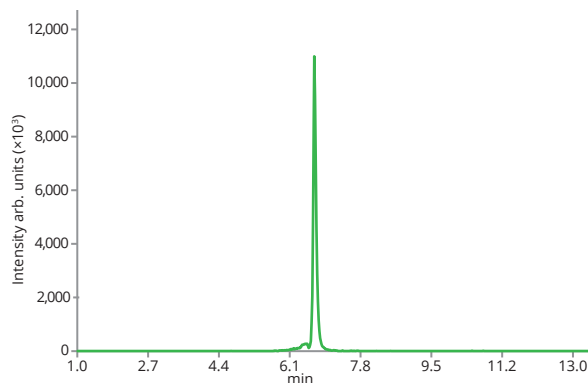
Carbamazepine 10,11-epoxide RT: 6.51, m/z 253.0972



Dihydroergotamine RT: 6.51, m/z 584.2867

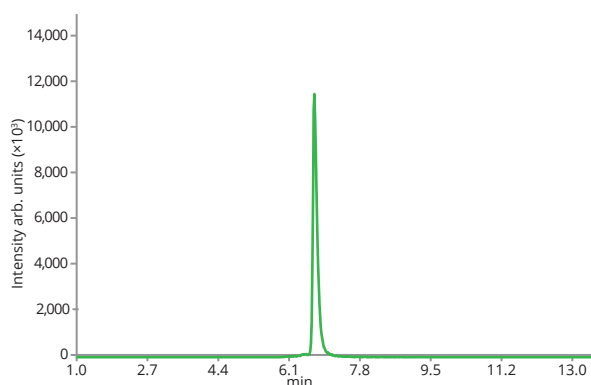


Desmethylocitalopram RT: 6.59, m/z 311.1559

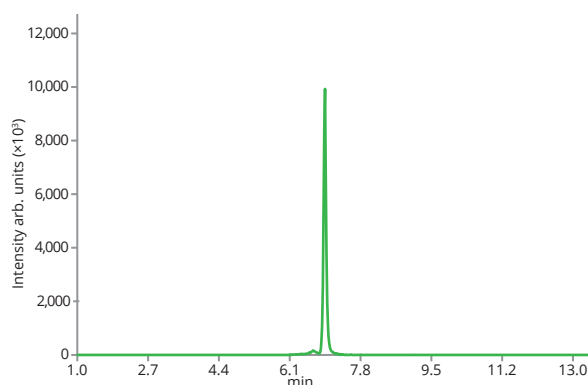


Citalopram RT: 6.71, m/z 325.1716

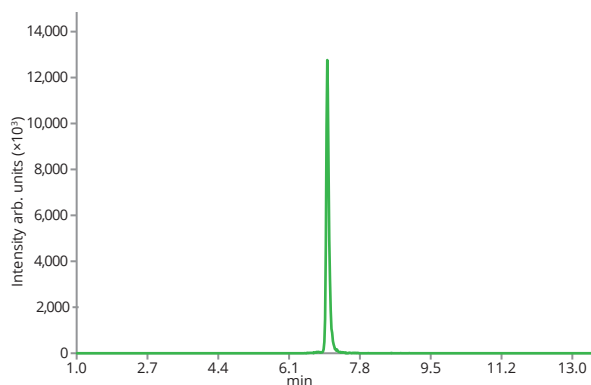
CNS agents monitoring



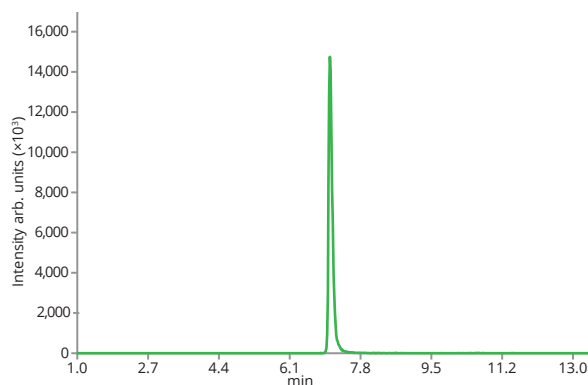
Mianserin RT: 6.73, m/z 265.1704



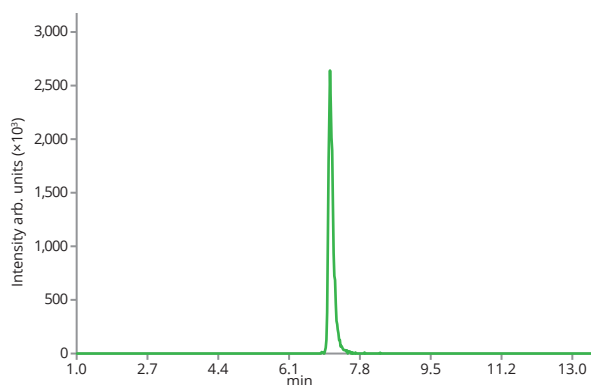
Haloperidol RT: 6.96, m/z 376.1479



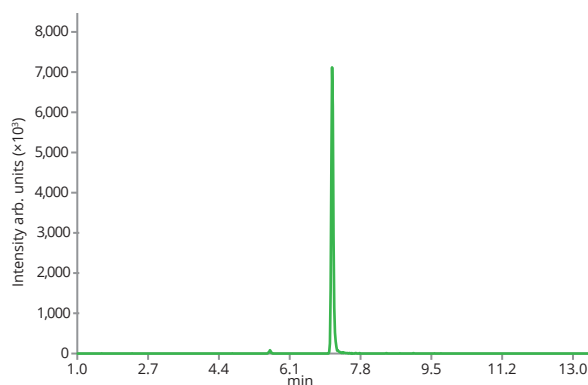
Paroxetine RT: 7.03, m/z 330.1505



Biperiden RT: 7.08, m/z 312.2327

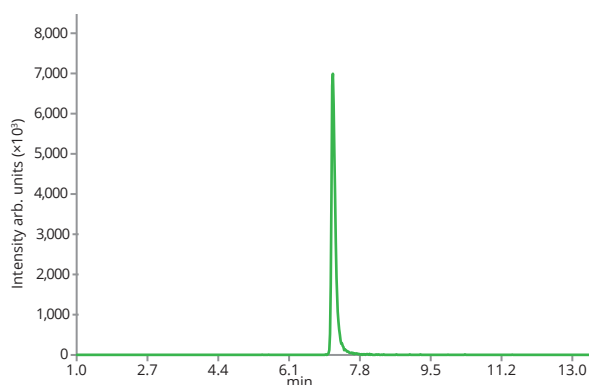


Orphenadrine RT: 7.08, m/z 270.1858

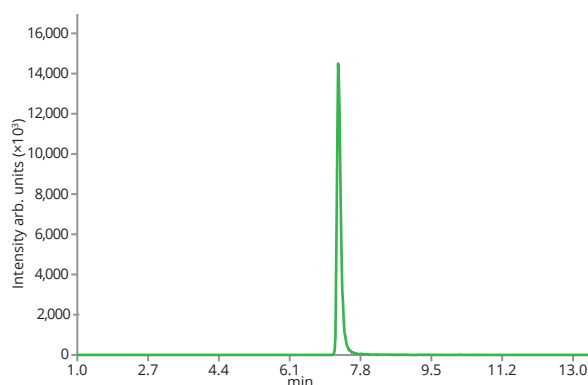


Carbamazepine RT: 7.15, m/z 237.1028

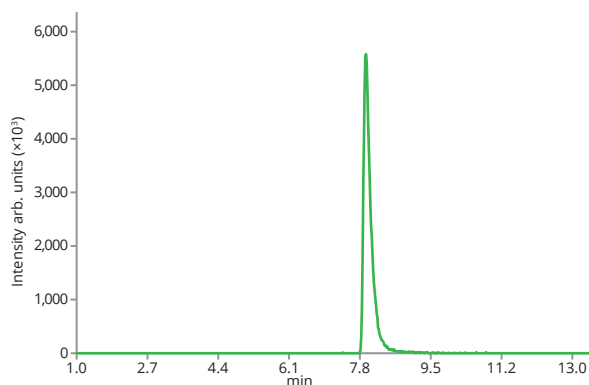
CNS agents monitoring



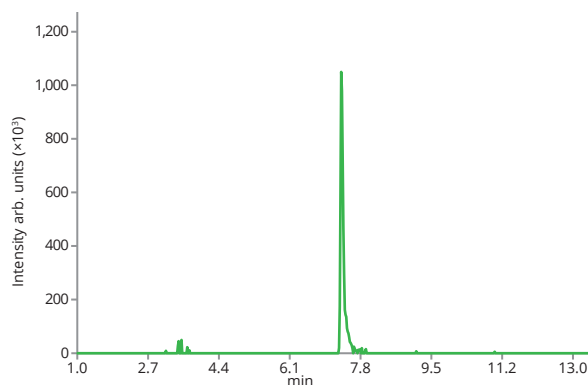
Hydroxyzine RT: 7.17, m/z 375.1839



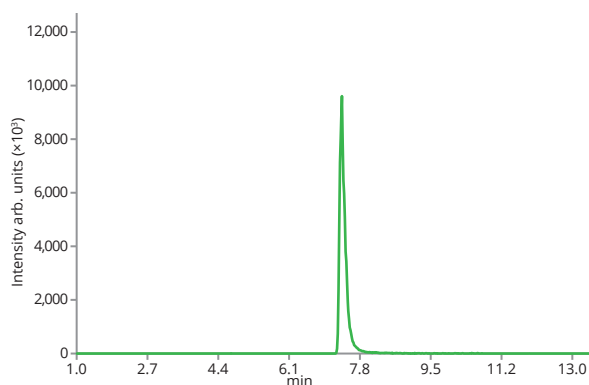
Trihexyphenidyl RT: 7.25, m/z 302.2484



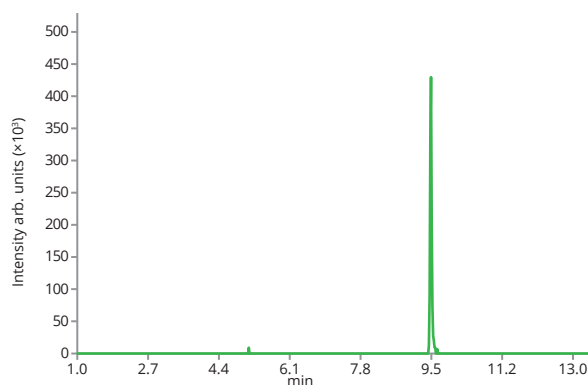
Vortioxetine RT: 7.96, m/z 299.1582



Oxazepam RT: 7.4, m/z 287.0587

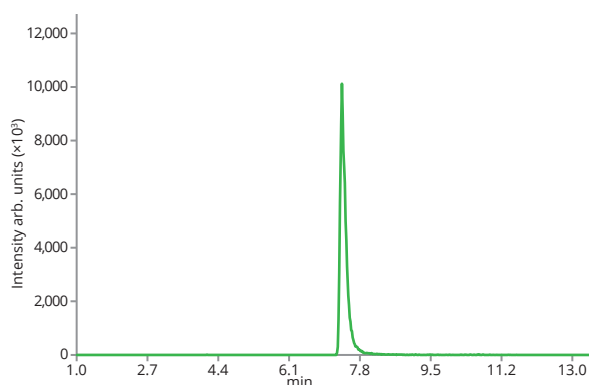


Cyproheptadine RT: 7.42, m/z 288.1752

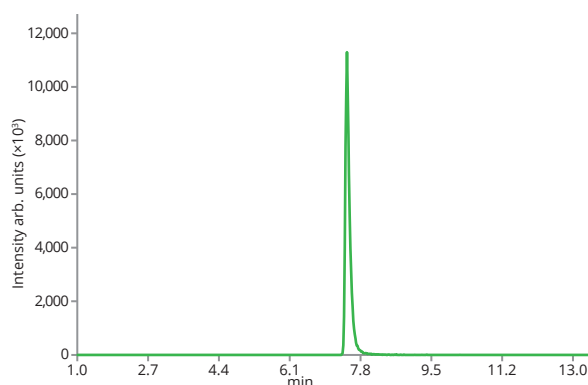


Diclofenac RT: 9.53, m/z 296.0245

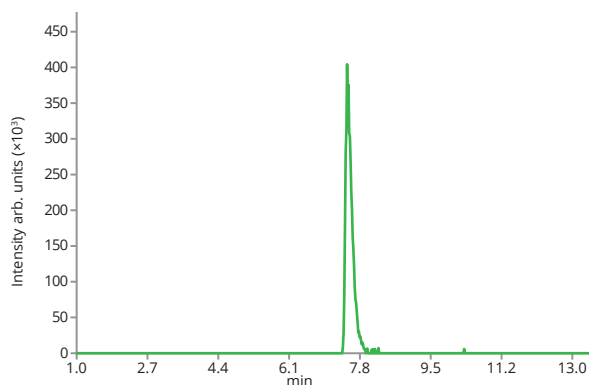
CNS agents monitoring



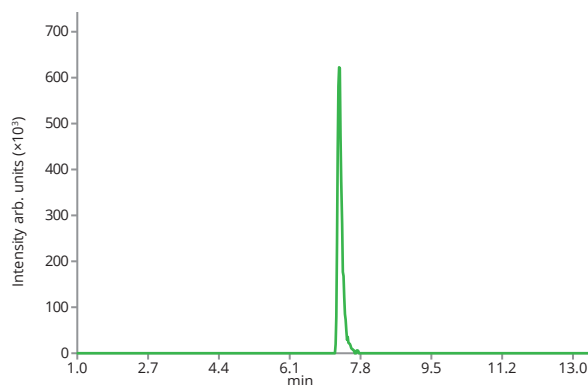
Pizotifen RT: 7.38, m/z 296.1473



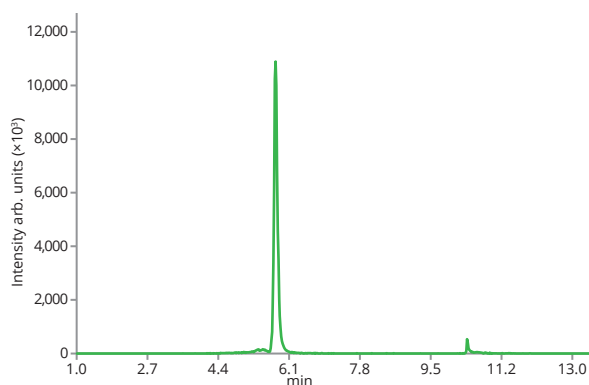
Levomepromazine RT: 7.49, m/z 329.1687



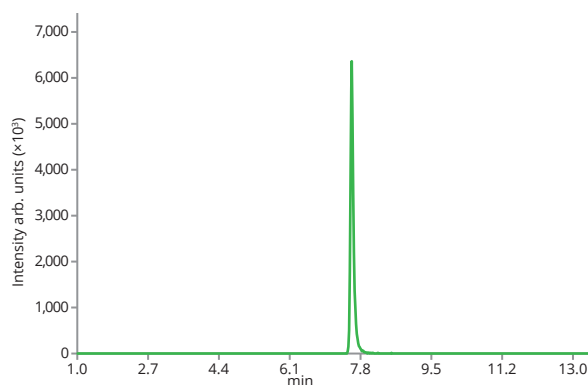
Amitriptyline RT: 7.51, m/z 233.1328



Maprotiline RT: 7.31, m/z 250.1591

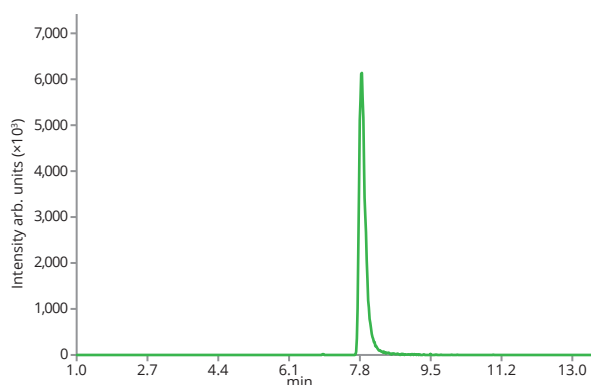


Venlafaxine RT: 5.79, m/z 278.212

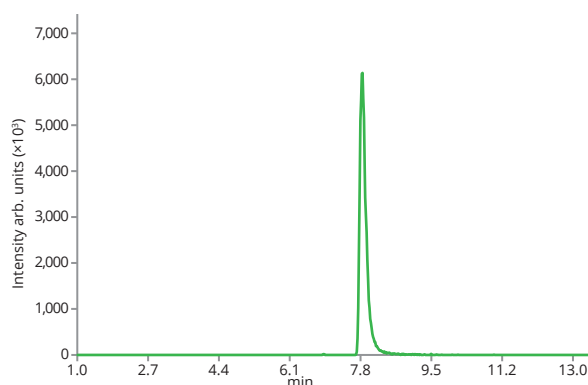


Nefazodone RT: 7.61, m/z 470.2323

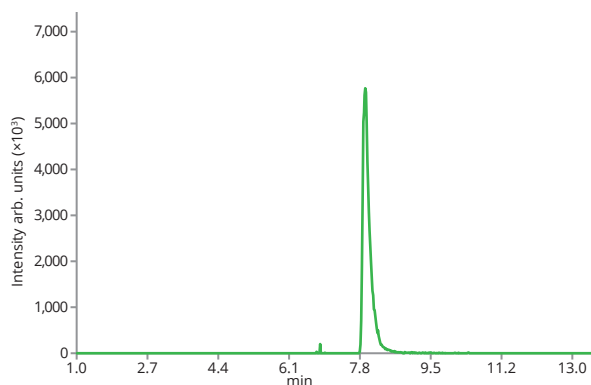
CNS agents monitoring



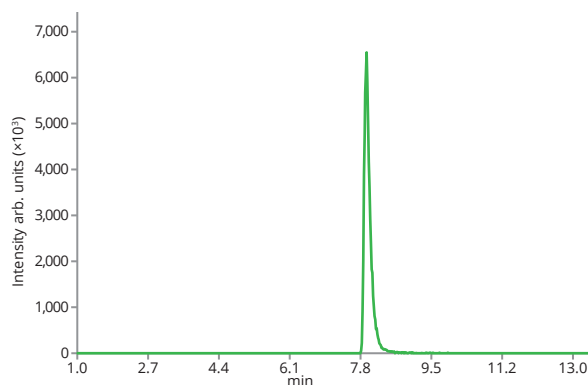
Sertraline RT: 7.71, m/z 306.0816



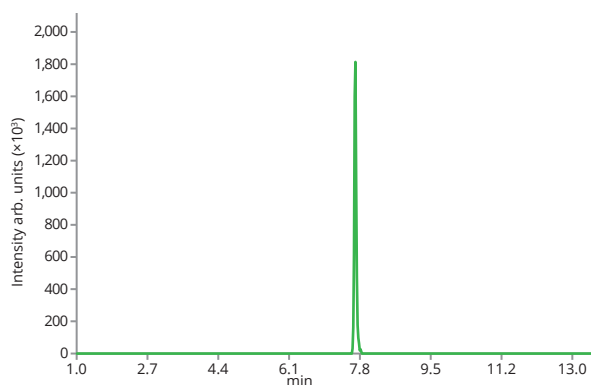
Chlorpromazine RT: 7.84, m/z 319.1035



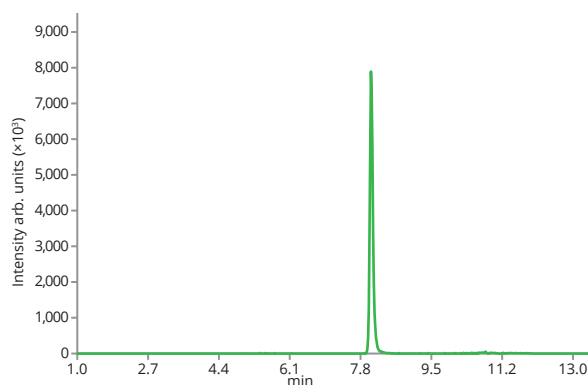
Chlorprothixene RT: 7.94, m/z 316.0926



Clomipramine RT: 7.96, m/z 315.1628

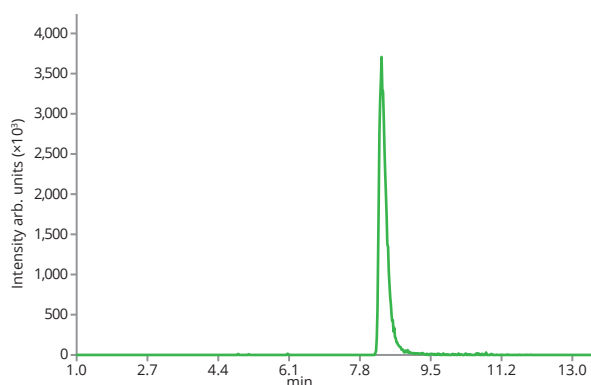


Clonazepam RT: 7.71, m/z 316.0489

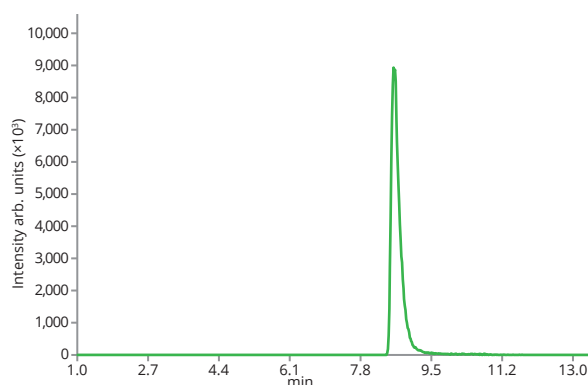


Loperamide RT: 8.06, m/z 477.2309

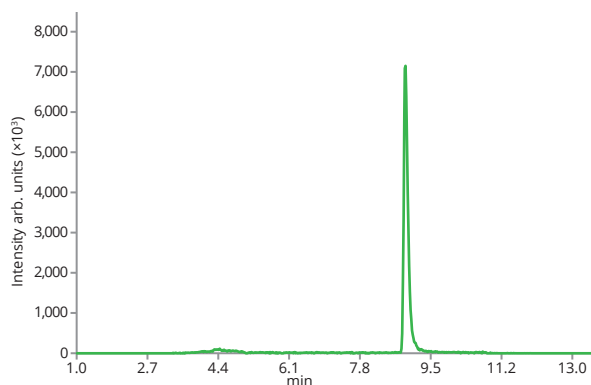
CNS agents monitoring



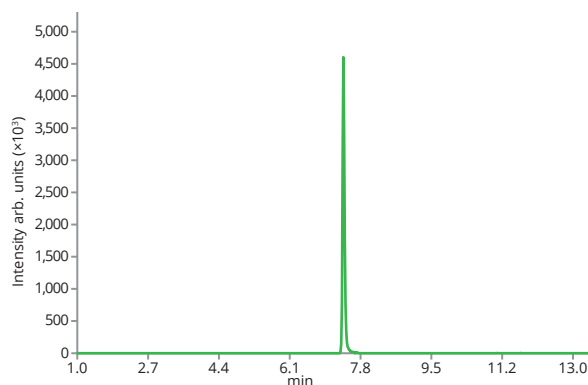
Clemastine RT: 8.33, m/z 344.1781



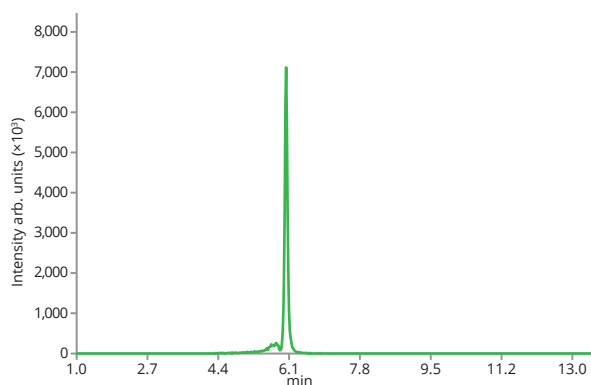
Dicycloverine RT: 8.62, m/z 310.2746



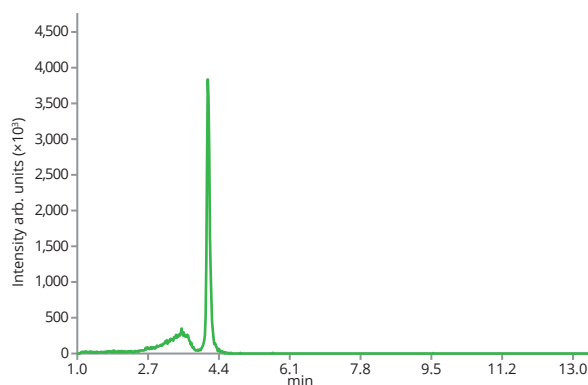
Meclizine RT: 8.91, m/z 391.1941



Alprazolam RT: 7.42, m/z 309.0907

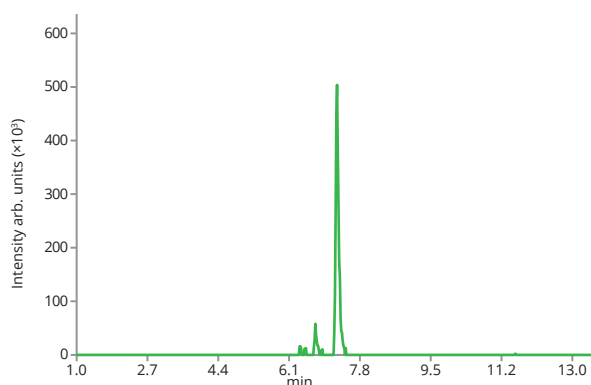


Trazodone RT: 6.05, m/z 372.1591

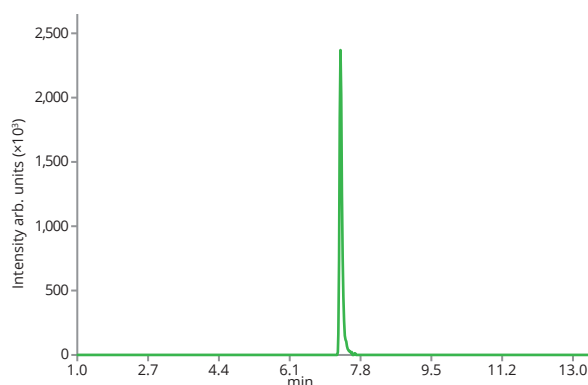


Amisulpride RT: 4.15, m/z 370.18

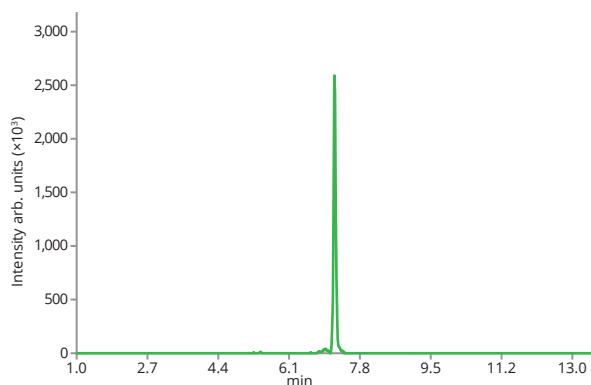
CNS agents monitoring



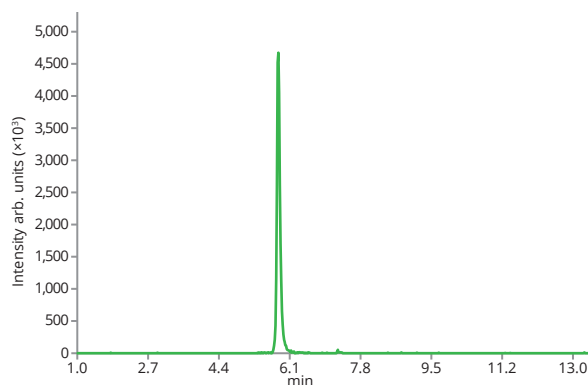
Duloxetine RT: 7.27, m/z 298.1265



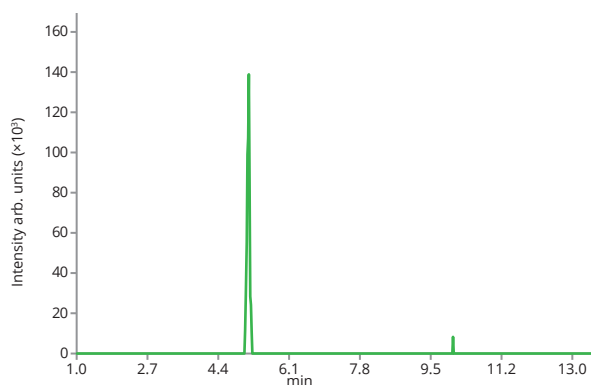
Cetirizine RT: 7.33, m/z 389.1632



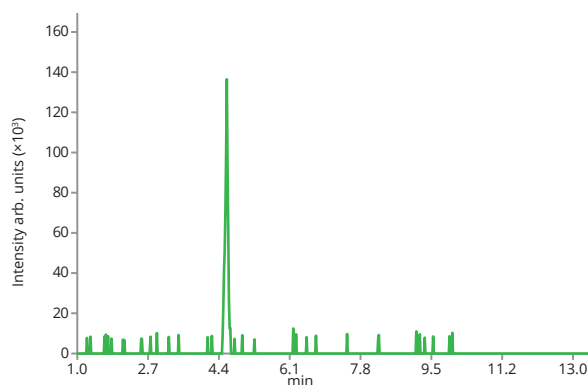
Fexofenadine RT: 7.2, m/z 502.2957



Memantine RT: 5.84, m/z 180.1752

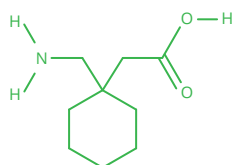


*rac trans-10,11-Dihydro-10,11-dihydroxy
Carbamazepine RT: 5.2, m/z 271.1082*

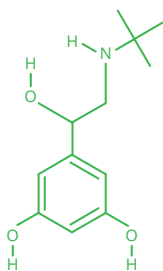


Primidone RT: 4.6, m/z 219.1133

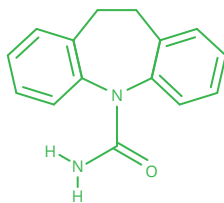
CNS agents monitoring



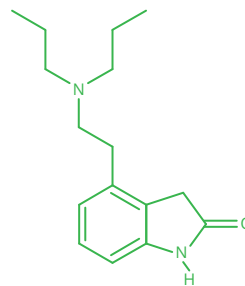
Gabapentin



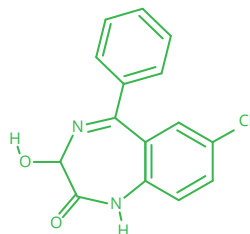
Terbutaline



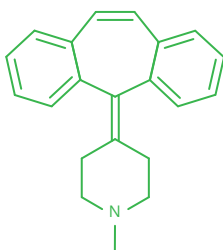
10,11-dihydrocarbamazepine



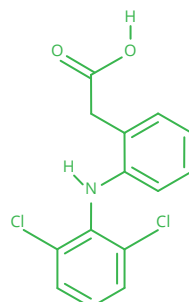
Ropinirole



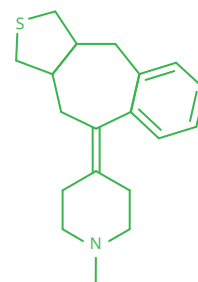
Oxazepam



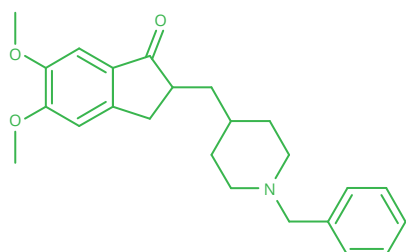
Cyproheptadine



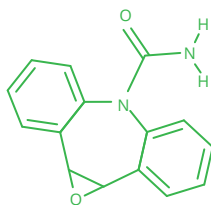
Diclofenac



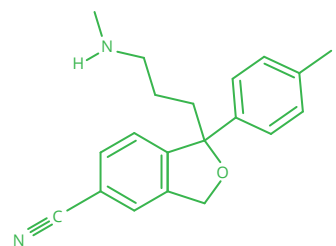
Pizotifen



Donepezil

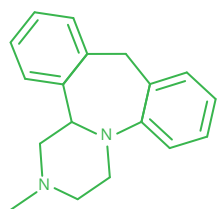


Carbamazepine 10,11-epoxide

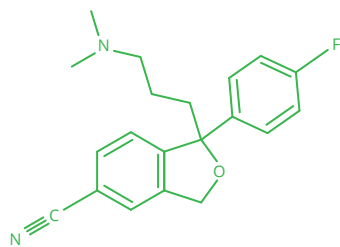


Desmethylocitalopram

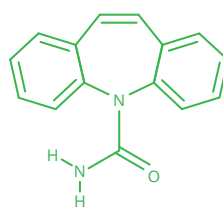
CNS agents monitoring



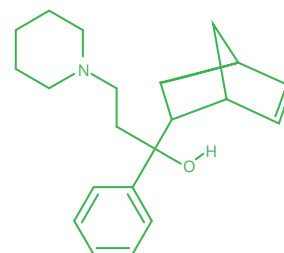
Mianserin



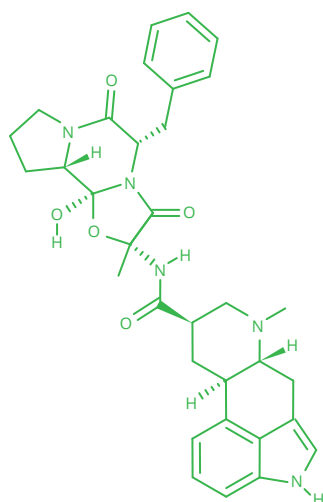
Citalopram



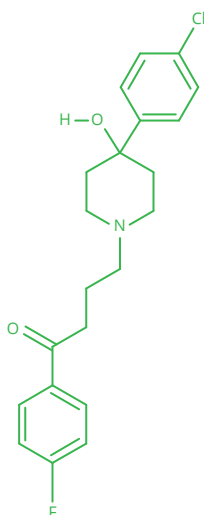
Carbamazepine



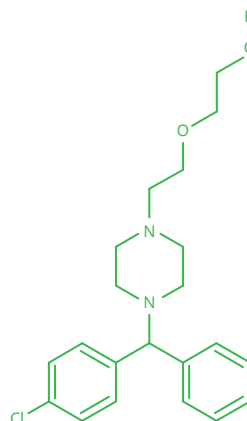
Biperiden



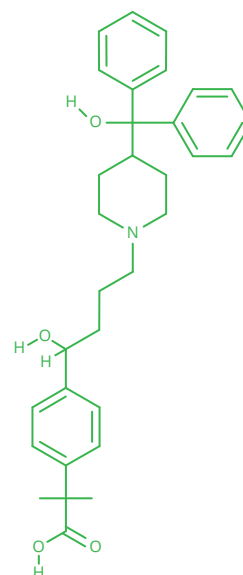
Dihydroergotamine



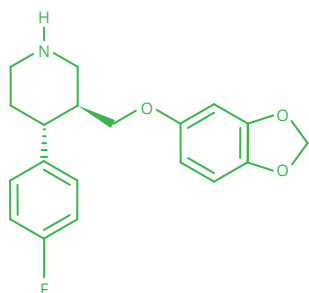
Haloperidol



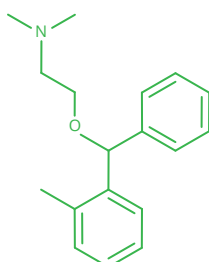
Hydroxyzine



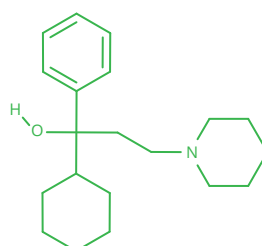
Fexofenadine



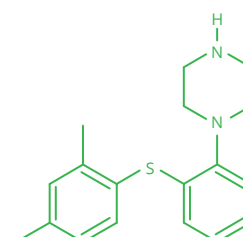
Paroxetine



Orphenadrine

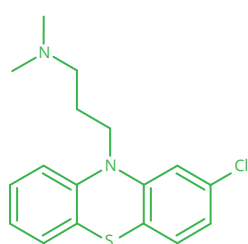


Trihexyphenidyl

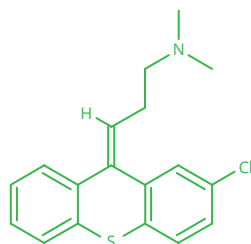


Vortioxetine

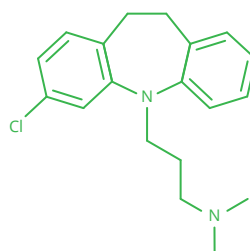
CNS agents monitoring



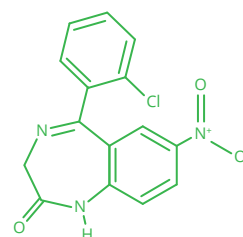
Chlorpromazine



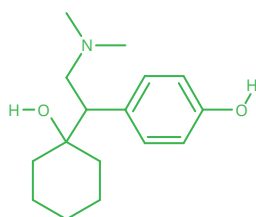
Chlorprothixene



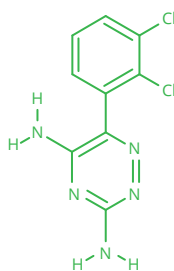
Clomipramine



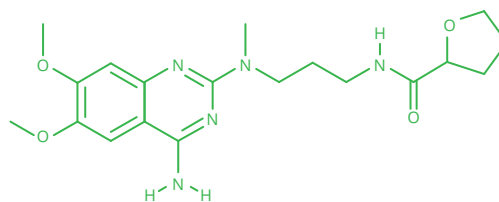
Clonazepam



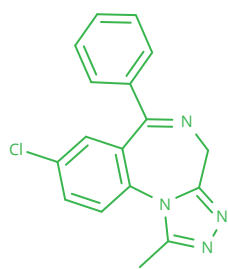
O-Desmethylvenlafaxine



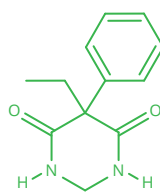
Lamotrigine



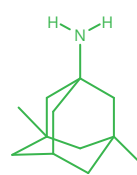
Alfuzosin



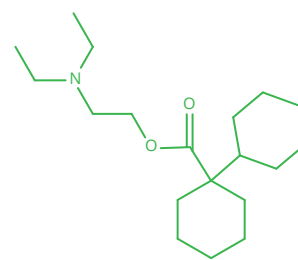
Alprazolam



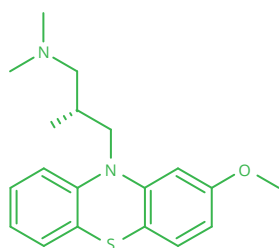
Primidone



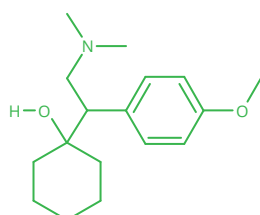
Memantine



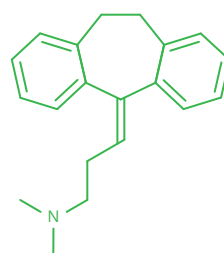
Dicycloverine



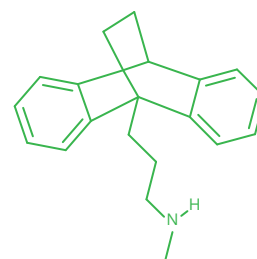
Levomepromazine



Venlafaxine

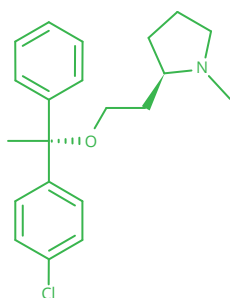


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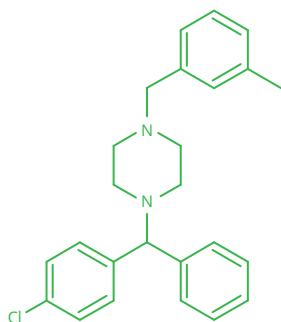


Maprotiline

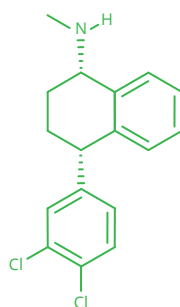
CNS agents monitoring



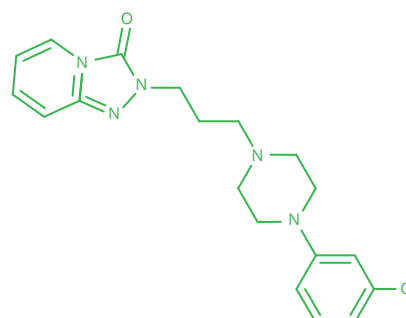
Clemastine



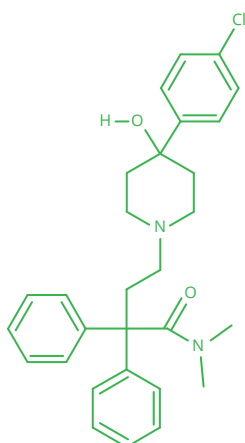
Meclizine



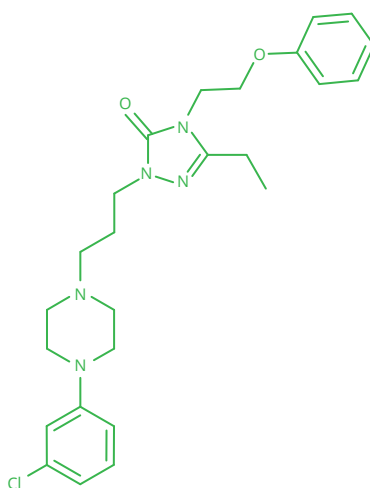
Sertraline



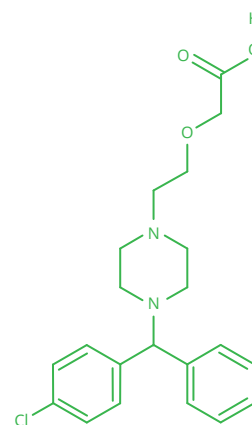
Trazodone



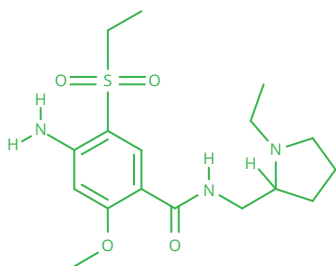
Loperamide



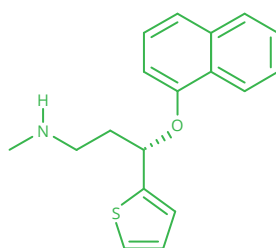
Nefazodone



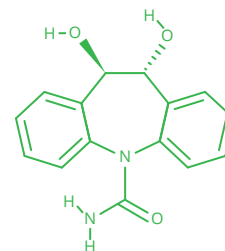
Cetirizine



Amisulpride



Duloxetine



rac trans-10,11-Dihydro-10,11-dihydroxy Carbamazepine