



中华人民共和国国家标准

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食品安全国家标准 动物性食品中127种药物残留的筛查 液相色谱-高分辨质谱法

National food safety standard—

Screening of 127 kinds of drug residues in animal derived food
by liquid chromatography-high resolution mass spectrometry

(征求意见稿)

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中华人民共和国农业农村部
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发布

前 言

本文件按照GB/T 1.1—2020《标准化工作导则 第1部分：标准化文件的结构和起草规则》的规定起草。

征求意见稿

食品安全国家标准

动物性食品中 127 种药物残留的筛查 液相色谱-高分辨质谱法

1 范围

本文件规定了动物性食品中127种药物残留筛查的制样和液相色谱-高分辨质谱检测方法。

本文件适用于猪肉、牛肉、羊肉、鸡肉、鸡蛋、鸭蛋、羊奶和牛奶中127种药物残留的筛查。

2 规范性引用文件

下列文件中的内容通过文中的规范性引用而构成本文件必不可少的条款。其中，注日期的引用文件，仅该日期对应的版本适用于本文件；不注日期的引用文件，其最新版本（包括所有的修改单）适用于本文件。

GB/T 6682 分析实验室用水规格和试验方法。

3 术语与定义

本文件没有需要界定的术语和定义。

4 原理

试样中目标物用0.1 mol/L McIlvaine-Na₂EDTA缓冲溶液和乙腈提取，氯化钠和无水硫酸钠盐析，固相萃取柱净化后，液相色谱-高分辨质谱检测分析。

5 试剂与材料

除另有规定外，所有试剂均为分析纯，水为符合GB/T 6682规定的一级水。

5.1 试剂

5.1.1 甲醇（CH₃OH）：色谱纯。

5.1.2 乙腈（CH₃CN）：色谱纯。

5.1.3 甲酸（CHOOH）：色谱纯。

5.1.4 氨水（NH₃ H₂O）：色谱纯。

5.1.5 二甲基亚砷（C₂H₆OS）。

- 5.1.6 丙酮 (C_3H_6O)。
- 5.1.7 磷酸氢二钠 ($Na_2HPO_4 \cdot 12H_2O$)。
- 5.1.8 乙二胺四乙酸二钠 ($C_{10}H_{14}N_2O_8Na_2 \cdot 2H_2O$)。
- 5.1.9 枸橼酸 ($C_6H_8O_7 \cdot H_2O$)。
- 5.1.10 无水硫酸钠 (Na_2SO_4)。
- 5.1.11 氯化钠 ($NaCl$)。

5.2 溶液配制

- 5.2.1 5%氯化甲醇：取氨水 5 mL，用甲醇稀释至 100 mL，混匀，即得。
- 5.2.2 甲醇溶液：取甲醇 20 mL，用水稀释至 100 mL，混匀，即得。
- 5.2.3 0.1mol/L McIlvaine- Na_2EDTA 缓冲溶液：取磷酸氢二钠 44.08 g，乙二胺四乙酸二钠 37.2 g，枸橼酸 8.08 g，用水溶解并稀释至 1 000 mL。
- 5.2.4 0.1%甲酸溶液：取甲酸 0.5 mL，用水稀释至 500 mL，混匀，即得。
- 5.2.5 0.1%甲酸乙腈溶液：取甲酸 0.5 mL，用乙腈稀释至 500 mL，混匀，即得。
- 5.2.6 0.03%氨水溶液：取氨水 0.15 mL，用水稀释至 500 mL，混匀，即得。
- 5.2.7 0.03%氯化乙腈溶液：取氨水 0.15 mL，用乙腈稀释至 500 mL，混匀，即得。

5.3 标准品

18 类 127 种药物，信息详见附录 A。

5.4 标准溶液制备

5.4.1 标准储备液 (1 mg/mL)：取 127 种药物标准品各适量 (相当于各活性成分 10 mg)，精密称定，分别于 10 mL 棕色容量瓶中，加入附表 A 中每种药物对应的溶剂适量使溶解并稀释至刻度，分别配成浓度为 1 mg/mL 的标准储备液， $-18\text{ }^\circ\text{C}$ 以下避光冷冻保存，保存期为 6 个月。其中大环内酯类药物保存期为 2 个月，硝基咪唑类药物、解热镇痛类药物、 β -内酰胺类药物现配现用。

5.4.2 混合标准中间液 (10 $\mu\text{g/mL}$)：按照附表 A 中药物的类别，移取每个类别中全部药物的标准储备液各 100 μL 于 10 mL 棕色容量瓶中，并用甲醇稀释至刻度，分别配成浓度为 10 $\mu\text{g/mL}$ 的磺胺类、氟喹诺酮类、硝基咪唑类、抗病毒类、林可胺类、酰胺醇类、 β -内酰胺类、喹噁啉类、解热镇痛类、精神类、大环内酯类、抗组胺类、截短侧耳类、驱虫类、农药类和其他类共 16 类混合标准中间液。现配现用。

5.4.3 混合标准工作液：分别准确移取适量的混合标准中间液，用 20% 甲醇溶液稀释成系列标准工作溶液，现配现用。

5.5 材料

5.5.1 HyperSep Retain PEP 固相萃取柱¹：500mg/6 mL，填料为改性多孔聚苯乙烯 DVB，或相当者。

5.5.2 有机微孔尼龙滤膜：0.22 μm。

5.5.3 离心管：50 mL。

6 仪器和设备

6.1 液相色谱-高分辨质谱：配 ESI 源（分辨率不低于 70000）。

6.2 分析天平：感量 0.000 01 g。

6.3 分析天平：感量 0.01 g。

6.4 组织匀浆器。

6.5 涡旋混合器：200-3000 次/分。

6.6 涡旋震荡器：500-3000 r/min。

6.7 离心机：转速可达 7000 r/min。

6.8 固相萃取装置。

6.9 氮吹仪。

7 试样的制备与保存

7.1 试样的制备

取适量新鲜或解冻的空白或供试组织，绞碎，并使均质。

取适量新鲜或解冻的空白或供试奶样品，混合均匀。

取适量新鲜或冷藏的空白或供试鸡蛋，去壳后混合均匀。

a) 取均质后的供试样品，作为供试试样。

b) 取均质后的空白样品，作为空白试样。

c) 取均质后的空白样品，作添加适宜浓度的标准工作液，作为空白添加试样。

7.2 试样的保存

¹注：此处列出 HyperSep Retain PEP 固相萃取柱仅是为了提供参考，并不涉及商业目的，鼓励标准使用者尝试采用不同厂家或型号的固相萃取柱。

-18℃以下保存。

8 测定步骤

8.1 提取

8.1.1 肌肉、禽蛋

称取试样(5±0.05)g于50 mL离心管中,加入3.0 mL 0.1 mol/L McIlvaine-Na₂EDTA 缓冲溶液,涡旋10 s,加入10.0 mL 乙腈,涡旋混匀后,振荡10 min,4000 r/min 离心5 min,转移上清液于另一50 mL离心管中,残渣用3.0 mL 0.1 mol/L McIlvaine-Na₂EDTA 缓冲溶液和10.0 mL 乙腈重复提取,合并两次上清液。上清液加入6 g 无水硫酸钠和1.5 g 氯化钠,涡旋30 s,静置10 min后7000 r/min 离心5 min,吸出上层液(乙腈层)备用。

8.1.2 牛奶、羊奶

称取试样(5±0.05)g于50 mL离心管中,加入20.0 mL 乙腈,涡旋混匀后,振荡10 min,7000 r/min 离心5 min,转移上清液于另一50 mL离心管中。上清液加入4 g 无水硫酸钠和1 g 氯化钠,涡旋30 s,静置10 min后7000 r/min 离心5 min,吸出上层液(乙腈层)备用。

8.2 净化

HyperSep Retain PEP 小柱依次用4 mL 甲醇和4 mL 水活化平衡后,取2 mL 备用液润洗小柱,弃去流出液。再移取适量备用液通过小柱,收集流出液并准确移取4 mL于40℃下氮吹干,加入200 μL 甲醇后涡旋混匀10 s,再加入800 μL 纯水涡旋混匀30 s,超声2 min后,过0.22 μm 尼龙微孔滤膜,上机测定。

8.3 测定

8.3.1 色谱参考条件

- a) 色谱柱: C18 柱,柱长150 mm,内径3.0 mm,粒径1.8 μm,或性能相当者;
- b) 柱温: 30℃;
- c) 进样量: 10 μL;
- d) 流速: 0.3 mL/min;
- e) 流动相: A: 正离子模式0.1%甲酸水,负离子模式0.03%氨水; B: 正离子模式0.1%甲酸乙腈,负离子模式0.03%氨水乙腈; 正离子模式梯度洗脱程序见表1,负离子模式梯度洗脱程序见表2。

表1 正离子模式流动相梯度洗脱程序

时间(min)	A(%)	B(%)
0	95	5
1.0	95	5
15	5	95
17	5	95
17.1	95	5
22.0	95	5

表2 负离子模式流动相梯度洗脱程序

时间(min)	A(%)	B(%)
0	95	5
8	5	95
10	5	95
10.1	95	5
13	95	5

8.3.2 质谱参考条件

- a) 离子源：电喷雾离子源（ESI+和 ESI-）；
- b) 扫描方式：全扫描加自动触发二级扫描模式；
- c) 毛细管电压：3.2 kv（ESI+）、2.8 kv（ESI-）；
- d) 离子传输管温度：325 ℃；
- e) 雾化气温度：350 ℃；
- f) 鞘气压：40 arb；
- g) 辅助气压：40 arb；
- h) 一级分辨率：70000
- i) 二级分辨率：17500
- j) 一级质谱驻留时间：100 ms；
- k) 二级质谱驻留时间：60 ms；
- l) 扫描质量范围：80 - 1000 m/z；
- m) 碰撞能量：20、40、60 eV。

8.4 高分辨质谱数据库的构建

质谱库中包含各药物的保留时间、精确分子量、二级碎片离子、同位素丰度比和二级质谱图，127 种药物的保留时间、精确分子量、二级碎片离子见附录 A。

8.5 筛查

在 5 ppm 质量窗口范围内进行提取：

目标物信号响应 $S/N > 3$ ；当 S/N 不存在时，那么至少 5 个连续的扫描点才能确定为一个信号。

②目标物保留时间与质谱库中的保留时间参数偏差 ≤ 0.2 min 或者 $\pm 2.5\%$ 以内（不超过 0.5 min）；

③目标物和高分辨质谱数据库相比，可以匹配上一级母离子和一个二级碎片离子，且一级母离子质量精度偏差 < 5 ppm，二级碎片离子质量精度偏差 < 10 ppm；

同时满足以上三项条件，则判定样品为疑似阳性样品。

注：质谱库保留时间需使用标准品不定期进行校正。

8.6 空白试验

取空白试样，除不加药物外，采用完全相同的操作步骤进行平行操作。

9 检测方法的灵敏度

本标准中 127 种药物的检测限见附录 A。

127 种药物标准溶液（10 $\mu\text{g/L}$ ）一级离子提取色谱图和二级质谱图见附录 B。

附录A
(资料性附录)

127 种药物质谱分析参数

液相色谱-高分辨质谱法 127 种药物的中英文名称、溶剂、分子式、CAS 号、理论精确质量数、碎片离子、保留时间、检出限等信息见表 A

表 A 127 种药物质谱库分析参数

类别	英文名称	中文名称	溶剂	分子式	CAS 号	纯度 (%)	离子化模式	理论精确质量数	碎片 1	碎片 2	碎片 3	碎片 4	保留时间 (min)	检测限 (μg/kg)
磺胺类	sulfadimidine	磺胺二甲嘧啶	甲醇	C ₁₂ H ₁₄ N ₄ O ₂ S	57-68-1	99	M+H	279.091	156.0114	124.0869	108.0444	204.0435	8.53	5
	Sulfadoxine	磺胺邻二甲氧嘧啶	甲醇	C ₁₂ H ₁₄ N ₄ O ₄ S	2447-57-6	99	M+H	311.0809	156.0114	140.0455	108.0444	92.0495	9.66	5
	Sulfafurazole	磺胺异噁唑	甲醇	C ₁₁ H ₁₃ N ₃ O ₃ S	127-69-5	98	M+H	268.075	156.0111	108.0446	92.0499	/	9.95	5
	Sulfaguanidine	磺胺脒	甲醇	C ₇ H ₁₀ N ₄ O ₂ S	57-67-0	98	M+H	215.0597	156.0114	108.0444	92.0495	60.0556	3.47	5
	Sulfamerazine	磺胺甲嘧啶	5%氯化甲醇	C ₁₁ H ₁₂ N ₄ O ₂ S	127-79-7	98	M+H	265.0754	190.0281	156.0114	108.0444	110.0713	7.97	5
	Sulfamethizole	磺胺甲噻二唑	甲醇	C ₉ H ₁₀ N ₄ O ₂ S ₂	144-82-1	99	M+H	271.0318	156.0114	108.0444	92.0495	/	8.42	5
	Sulfamethoxazole	磺胺甲恶唑	甲醇	C ₁₀ H ₁₁ N ₃ O ₃ S	723-46-6	99	M+H	254.0594	156.0114	108.0444	/	/	9.68	5
	sulfametoxydiazine	磺胺对甲氧嘧啶	5%氯化甲醇	C ₁₁ H ₁₂ N ₄ O ₃ S	651-06-9	98	M+H	281.0703	108.0447	156.0112	126.0662	92.0499	8.77	5
	Sulfamethoxy pyridazine	磺胺甲氧哒嗪	5%氯化甲醇	C ₁₁ H ₁₂ N ₄ O ₃ S	80-35-3	97.8	M+H	281.0703	215.0927	156.0114	126.0662	/	8.97	5
	Sulfamonomethoxine	磺胺间甲氧嘧啶	甲醇	C ₁₁ H ₁₂ N ₄ O ₃ S	1220-83-3	99.5	M+H	281.0703	215.0927	156.0114	126.0662	/	9.3	5
	Sulfamoxole	磺胺二甲唑	甲醇	C ₁₁ H ₁₃ N ₃ O ₃ S	729-99-7	99	M+H	268.075	156.0111	108.0446	92.0499	113.0712	8.11	5
	Sulfapyridine	磺胺吡啶	5%氯化甲醇	C ₁₁ H ₁₁ N ₃ O ₂ S	144-83-2	98	M+H	250.0645	184.0869	156.0114	108.0444	95.0604	7.63	5
	Sulfaquinoxaline	磺胺喹恶琳	5%氯化甲醇	C ₁₄ H ₁₂ N ₄ O ₂ S	59-40-5	96	M+H	301.0754	156.0114	108.0444	92.0495		10.43	5
	Sulfathiazole	磺胺噻唑	甲醇	C ₉ H ₉ N ₃ O ₂ S ₂	72-14-0	99.9	M+H	256.0209	156.0114	108.0444	92.0495	/	7.38	5
	sulfisomidine	磺胺二甲异嘧啶	甲醇	C ₁₂ H ₁₄ N ₄ O ₂ S	515-64-0	98	M+H	279.091	124.0869	108.0444	156.0114	204.0431	6.59	5

Trimethoprim	甲氧苄啶	甲醇	C ₁₄ H ₁₈ N ₄ O ₃	738-70-5	99.8	M+H	291.1452	275.1139	261.0982	245.1033	123.0665	7.29	5
Diaveridine	二甲氧苄啶	甲酸	C ₁₃ H ₁₆ N ₄ O ₂	5355-16-8	98	M+H	261.1346	245.1033	123.0665	81.0447	/	7.01	5
Phthalylsulfathiazole	酞磺胺噻唑	甲醇	C ₁₇ H ₁₃ N ₃ O ₅ S ₂	85-73-4	98	M+H	404.0369	149.0231	256.0203	108.0446	156.0111	9.41	5
Sulfabenzamide	苯酰磺胺	甲醇	C ₁₃ H ₁₂ N ₂ O ₃ S	127-71-9	99.7	M+H	277.0641	156.0114	108.0444	92.0495	/	10.44	5
Sulfacetamide	乙酰磺胺	甲醇	C ₈ H ₁₀ N ₂ O ₃ S	144-80-9	98	M+H	215.0485	173.0379	156.0114	108.0444	92.0495	6.84	5
Sulfachloropyridazine	磺胺氯吡嗪	甲醇	C ₁₀ H ₉ ClN ₄ O ₂ S	80-32-0	99.4	M+H	285.0208	156.0114	108.0444	92.0495	/	9.35	5
Sulfaclozine	磺胺氯吡嗪	甲醇	C ₁₀ H ₉ ClN ₄ O ₂ S	102-65-8	99	M+H	285.0208	130.0166	156.0111	108.0446	94.0655	10.77	10
Sulfadiazine	磺胺嘧啶	5% 氨化甲醇	C ₁₀ H ₁₀ N ₄ O ₂ S	68-35-9	99	M+H	251.0597	156.0114	108.0444	92.0495	/	7.54	5
Sulfadimethoxypyrimidine	磺胺间二甲氧嘧啶	甲醇	C ₁₂ H ₁₄ N ₄ O ₄ S	155-91-9	99.9	M+H	311.0809	156.0768	108.0444	245.1033	/	10.81	10
Marbifloxacin	马波沙星	5% 氨化甲醇	C ₁₇ H ₁₉ FN ₄ O ₄	11550-35-1	99.8	M+H	363.1463	320.1041	72.0808	/	/	7.17	5
Nadifloxacin	那氟沙星	5% 氨化甲醇	C ₁₉ H ₂₁ FN ₂ O ₄	124858-35-1	99.9	M+H	361.1558	343.1439	283.0873	257.0714	/	10.9	5
Nalidixic acid	萘啶酸	5% 氨化甲醇	C ₁₂ H ₁₂ N ₂ O ₃	389-08-2	99.8	M+H	233.0921	205.0608	187.0502	/	/	11.73	5
Orbifloxacin	奥比沙星	5% 氨化甲醇	C ₁₉ H ₂₀ F ₃ N ₃ O ₃	113617-63-3	97	M+H	396.153	352.1631	295.1053	/	/	7.89	1
Oxolinic acid	恶喹酸	5% 氨化甲醇	C ₁₃ H ₁₁ NO ₅	14698-29-4	98	M+H	262.071	244.0604	234.0397	/	/	10.23	5
Pipemidic Acid	吡哌酸	甲醇	C ₁₄ H ₁₇ N ₅ O ₃	51940-44-4	99.1	M+H	304.1404	290.1663	233.1085	/	/	7.04	5
Cinoxacin	西诺沙星	5% 氨化甲醇	C ₁₂ H ₁₀ N ₂ O ₅	28657-80-9	98	M+H	263.0663	235.0713	217.0608	207.0400	189.0295	9.82	1
Sarafloxacin	沙拉沙星	5% 氨化甲醇	C ₂₀ H ₁₇ F ₂ N ₃ O ₃	98105-99-8	97.7	M+H	386.1311	342.1413	299.0991	/	/	8.16	5
Sparfloxacin	司帕沙星	5% 氨化甲醇	C ₁₉ H ₂₂ F ₂ N ₄ O ₃	110871-86-8	99.2	M+H	393.1733	349.1834	292.1256	251.0865	230.0724	8.22	5
Ciprofloxacin	环丙沙星	5% 氨化甲醇	C ₁₇ H ₁₈ FN ₃ O ₃	85721-33-1	99.4	M+H	332.1405	288.1507	245.1085	231.0564	/	7.41	5
Danofloxacin	达氟沙星	甲醇	C ₁₉ H ₂₀ FN ₃ O ₃	112398-08-0	99.8	M+H	358.1562	314.1663	283.1241	257.1085	96.0808	7.54	5
Difloxacin	二氟沙星	甲醇	C ₂₁ H ₁₉ F ₂ N ₃ O ₃	98106-17-3	99.1	M+H	400.1467	356.1569	299.0991	/	/	8.27	5
Enoxacin	依诺沙星	5% 氨化甲醇	C ₁₅ H ₁₇ FN ₄ O ₃	74011-58-8	94.7	M+H	321.1358	277.1459	257.1397	234.1037	206.0724	7.19	10
Enrofloxacin	恩诺沙星	甲醇	C ₁₉ H ₂₂ FN ₃ O ₃	93106-60-6	99.6	M+H	360.1718	316.182	245.1085	/	/	7.73	5
Fleroxacin	氟罗沙星	5% 氨化甲醇	C ₁₇ H ₁₈ F ₃ N ₃ O ₃	79660-72-3	99.6	M+H	370.1373	326.1475	269.0896	/	/	7.36	5
Flumequine	氟甲喹	5% 氨化甲醇	C ₁₄ H ₁₂ FNO ₃	42835-25-6	99.7	M+H	262.0874	244.0768	220.0405	/	/	11.59	5

	Gatifloxacin	加替沙星	5%氯化甲醇	C ₁₉ H ₂₂ FN ₃ O ₄	112811-59-3	99	M+H	376.1667	332.1769	289.1347	261.1034	219.0564	7.97	1
硝基咪唑类	Iprnidazole	异丙硝唑	甲醇	C ₇ H ₁₁ N ₃ O ₂	14885-29-1	99	M+H	170.0924	140.0944	123.0917	96.0682	84.0808	10.33	5
	Ornidazole	奥硝唑	甲醇	C ₇ H ₁₀ ClN ₃ O ₃	16773-42-5	99.9	M+H	220.0484	128.0455	203.143	/	/	8.81	5
	Hydroxydiminidazole	羟基地美硝唑	甲醇	C ₅ H ₇ N ₃ O ₃	936-05-0	99.6	M+H	158.056	140.0455	110.0475	/	/	6.5	5
	Secnidazole	塞克硝唑	甲醇	C ₇ H ₁₁ N ₃ O ₃	3366-95-8	99.9	M+H	186.0873	128.0455	111.0427	82.0525	/	7.56	5
抗病毒类	Amantadine	金刚烷胺	甲醇	C ₁₀ H ₁₇ N	768-94-5	98.8	M+H	152.1434	135.1168	107.0855	93.0699	/	7.48	1
	Rimantadine	金刚乙胺	甲醇	C ₁₂ H ₂₁ N	1501-84-4	99.8	M+H	180.1747	163.1478	81.0704	107.0857	/	9	1
林可胺类	Clindamycin	克林霉素	甲醇	C ₁₈ H ₃₃ ClN ₂ O ₅ S	18323-44-9	98	M+H	425.1872	126.1277	377.1838	/	/	8.69	10
	Lincomycin	林可霉素	甲醇	C ₁₈ H ₃₄ N ₂ O ₆ S	154-21-2	98.7	M+H	407.221	126.1277	359.2177	/	/	6.76	10
酰胺醇类	Thiamphenicol	甲砒霉素	甲醇	C ₁₂ H ₁₅ Cl ₂ NO ₅ S	15318-45-3	99	M-H	353.9975	290.0259	185.0278	119.0502	78.9859	6.07	1
β-内酰胺类	Flucloxacillin	氟氯西林	甲醇	C ₁₉ H ₁₇ ClFN ₃ O ₅ S	5250-39-5	92.6	M+H	454.0634	160.0424	114.0374	295.0275	/	12.85	50
	cloxacillin	氯唑西林	甲醇	C ₁₉ H ₁₈ ClN ₃ O ₅ S	61-72-3	91	M+H	436.0729	277.0374	206.0367	178.0054	160.0427	12.6	50
	Nafcillin	萘夫西林	甲醇	C ₂₁ H ₂₂ N ₂ O ₅ S	985-16-0	97	M+H	415.1322	199.0754	171.0441	256.0968	143.0491	12.83	50
	piperacillin	哌拉西林	甲醇	C ₂₃ H ₂₇ N ₅ O ₇ S	61477-96-1	94.4	M+H	518.1704	143.0815	115.0502	160.0427	/	10.32	10
	Penicillin G	青霉素 G	甲醇	C ₁₆ H ₁₈ N ₂ O ₄ S	61-33-6	99	M+H	335.106	217.0641	176.0706	160.0427	114.0372	11.1	10
喹噁啉类	Quinocetone	喹烯酮	甲醇	C ₁₈ H ₁₄ N ₂ O ₃	81810-66-4	99	M+H	307.1077	143.0602	273.1018	131.0491	245.1069	12.24	5
解热镇痛类	Phenacetin	非那西丁	甲醇	C ₁₀ H ₁₃ NO ₂	62-44-2	99.9	M+H	180.1019	110.0602	138.0911	152.0704	/	10.2	5
	Aminophenazone	氨基比林	甲醇	C ₁₃ H ₁₇ N ₃ O	58-15-1	99.4	M+H	232.1444	113.1074	98.0842	111.0918	/	6.46	10
	Antipyrine	安替比林	甲醇	C ₁₁ H ₁₂ N ₂ O	60-80-0	99.9	M+H	189.1022	147.0914	161.107	56.0502	/	8.45	1
	Paracetamol	对乙酰氨基酚	甲醇	C ₈ H ₉ NO ₂	103-90-2	98	M+H	152.0706	110.06	65.0386	/	/	6.65	10
精神类	Haloperidol	氟哌啶醇	甲醇	C ₂₁ H ₂₃ ClFNO ₂	52-86-8	99.7	M+H	376.1474	358.1369	165.071	123.0241	/	10.17	5
	Imipramine	丙咪嗪	甲醇	C ₁₉ H ₂₄ N ₂	113-52-0	100	M+H	281.2012	86.0963	236.1434	58.0654	/	10.53	1
	Nitrazepam	硝西洋	甲醇	C ₁₅ H ₁₁ N ₃ O ₃	146-22-5	99.5	M+H	282.0873	268.0838	207.0913	180.0804	/	11.73	5
	Oxazepam	奥沙西洋	甲醇	C ₁₅ H ₁₁ ClN ₂ O ₂	604-75-1	100	M+H	287.0582	241.052	269.047	104.0497	231.0679	11.66	1
	Pemoline	匹莫林	甲醇	C ₉ H ₈ N ₂ O ₂	2152-34-3	98	M+H	177.0659	106.0651	79.0542	160.0392	/	7.87	1

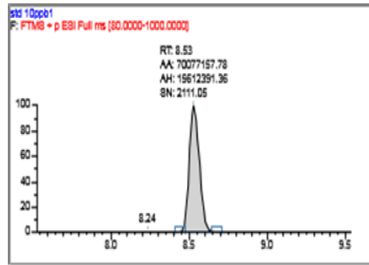
	perphenazine	奋乃静	甲醇	C ₂₁ H ₂₆ ClN ₃ OS	58-39-9	99.9	M+H	404.1558	143.1176	171.1488	100.0760	70.0658	10.91	5
	Promethazine	异丙嗪	甲醇	C ₁₇ H ₂₀ N ₂ S	60-87-7	99.5	M+H	285.142	198.0372	86.0964	240.0836	/	10.19	1
	Proionylpromazine	丙酰丙嗪	甲醇	C ₂₀ H ₂₄ N ₂ OS	7681-67-6	97	M+H	341.1682	86.0964	58.0651	/	/	10.75	5
	Sulpiride	舒必利	甲醇	C ₁₅ H ₂₃ N ₃ O ₄ S	15676-16-1	100	M+H	342.1482	214.0169	112.1121	98.0964	84.0808	6.21	5
	Xylazine	甲苯噻嗪	甲醇	C ₁₂ H ₁₆ N ₂ S	7361-61-7	99.8	M+H	221.1107	90.0372	164.0528	58.0653	/	8.27	1
	Acetopromazine	乙酰丙嗪	甲醇	C ₁₉ H ₂₂ N ₂ OS	61-00-7	98.5	M+H	327.1526	254.0634	86.0964	/	/	10.1	1
	Aaperol	阿扎哌醇	甲醇	C ₁₉ H ₂₄ FN ₃ O	2804-05-9	98	M+H	330.1976	312.1865	121.076	149.0761	109.0448	7.33	1
	Azaperone	阿扎哌隆	甲醇	C ₁₉ H ₂₂ FN ₃ O	1649-18-9	98	M+H	328.182	165.0707	121.076	123.0240	/	7.88	1
	Carbamazepine	卡马西平	甲醇	C ₁₅ H ₁₂ N ₂ O	298-46-4	98	M+H	237.1022	194.0964	220.0757	179.0730	192.0808	11.34	1
	Droperidol	氟哌利多	甲醇	C ₂₂ H ₂₂ FN ₃ O ₂	548-73-2	99.3	M+H	380.1769	165.0707	194.0973	123.0240	/	9.28	1
	Estazolam	艾司唑仑	甲醇	C ₁₆ H ₁₁ ClN ₄	29975-16-4	97	M+H	295.0745	267.0552	205.0755	241.0521	138.0103	11.54	1
抗组胺类	Diphenhydramine	苯海拉明	甲醇	C ₁₇ H ₂₁ NO	58-73-1	99	M+H	256.1696	167.0855	152.0621	/	/	9.82	1
大环内酯类	Clarithromycin	克拉霉素	甲醇	C ₃₈ H ₆₉ NO ₁₃	81103-11-9	96	M+H	748.4842	158.1176	116.0706	98.0964	83.0491	10.85	5
	Erythromycin	红霉素	甲醇	C ₃₇ H ₆₇ NO ₁₃	114-07-8	98	M+H	734.4685	158.1176	116.0706	98.0964	83.0491	9.82	10
	Kitasamycin	吉他霉素 A5	甲醇	C ₄₀ H ₆₇ NO ₁₄	1392-21-8	91.7	M+H	786.4634	558.3273	174.1125	109.0648	229.1434	10.75	50
	Tilmicosin	替米考星	甲醇	C ₄₆ H ₈₀ N ₂ O ₁₃	108050-54-0	95.3	M+H	869.5733	174.1125	88.0757	/	/	8.93	50
	Tylosin A	泰乐菌素 A	甲醇	C ₄₆ H ₇₇ NO ₁₇	8026-48-0	98	M+H	916.5264	772.4478	174.1125	88.0757	83.0491	10.17	10
驱虫类	Mebendazole	甲苯达唑	二甲基亚砷	C ₁₆ H ₁₃ N ₃ O ₃	31431-39-7	99.9	M+H	296.103	264.0768	105.0335	/	/	10.85	10
	Mebendazole-amine	氨基甲苯达唑	甲醇	C ₁₄ H ₁₁ N ₃ O	52329-60-9	99	M+H	238.0975	105.0337	95.0491	/	/	8.45	5
	2-Aminoflubendazole	2-氨基氟苯咪唑	二甲基亚砷	C ₁₄ H ₁₀ FN ₃ O	82050-13-3	99	M+H	256.0881	123.0241	113.0397	/	/	8.74	5
	Oxibendazole	奥苯达唑	二甲基亚砷	C ₁₂ H ₁₅ N ₃ O ₃	20559-55-1	99.8	M+H	250.1186	218.0924	176.0455	/	/	9.14	5
	Parbendazole	帕苯咪唑	二甲基亚砷	C ₁₃ H ₁₇ N ₃ O ₂	14255-87-9	98	M+H	248.1394	216.1131	160.0505	173.0584	/	10.31	10
	Thiabendazole-5-Hydroxy	5-羟基噻苯达唑	二甲基亚砷	C ₁₀ H ₇ N ₃ OS	948-71-0	99.1	M+H	218.0383	191.0274	147.0553	/	/	6.44	1
	Thiabendazole	噻苯达唑	甲醇	C ₁₀ H ₇ N ₃ S	148-79-8	99	M+H	202.0433	175.0325	131.0604	92.0495	/	7.05	1
	Albendazole	阿苯达唑	甲酸	C ₁₂ H ₁₅ N ₃ O ₂ S	54965-21-8	97.3	M+H	266.0958	234.0696	191.0148	159.0427	/	10.57	10

	Albendazole sulfone	阿苯达唑砒	甲酸	C ₁₂ H ₁₅ N ₃ O ₄ S	75184-71-3	99.4	M+H	298.0856	266.0594	224.0124	191.0325	159.0427	9.4	5
	Albendazole sulfoxide	阿苯达唑亚砒	甲醇	C ₁₂ H ₁₅ N ₃ O ₃ S	54029-12-8	98	M+H	282.0907	240.0435	208.0175	191.0148	159.0427	8.08	5
	Albendazole-2-aminosulfone	阿苯达唑氨基砒	甲醇	C ₁₀ H ₁₃ N ₃ O ₂ S	80983-34-2	99.8	M+H	240.0801	198.0332	165.0533	133.0635	/	6.94	5
	Benzimidazole	苯并咪唑	甲醇	C ₇ H ₆ N ₂	51-17-2	98	M+H	119.0604	92.0495	65.0386	/	/	4.8	5
	Lobendazole	洛苯达唑	二甲基亚砒	C ₁₀ H ₁₁ N ₃ O ₂	6306-71-4	98	M+H	206.0924	160.0505	178.0609	206.0924	/	7.49	1
	Clopidol	氯羟吡啶	甲醇	C ₇ H ₇ Cl ₂ NO	2971-90-6	97	M+H	191.9978	86.9996	101.0153	128.0262	/	7.07	1
	Dinitolmide	二硝托胺	甲醇	C ₈ H ₇ N ₃ O ₅	148-01-6	98.6	M-H	224.0313	181.0244	77.0386	166.0135	/	7.12	10
	3-amino-5-nitro-o-toluamide	二硝托胺代谢物	甲醇	C ₈ H ₉ N ₃ O ₃	3572-44-9	96	M+H	196.0716	107.0729	153.0658	/	/	7.01	50
	Halofuginone	常山酮	甲醇	C ₁₆ H ₁₇ BrClN ₃ O ₃	55837-20-2	99	M+H	414.0215	100.076	120.0808	138.0911	/	8.89	10
	Levamisole	左旋咪唑	甲醇	C ₁₁ H ₁₂ N ₂ S	14769-73-4	99.9	M+H	205.0794	178.0685	91.0542	/	/	6.99	5
农药类	Buprofezin	噻嗪酮	丙酮	C ₁₆ H ₂₃ N ₃ OS	69327-76-0	98.8	M+H	306.1635	201.1056	116.0529	106.0651	145.0430	16.63	5
	Carboxin	萎锈灵	丙酮	C ₁₂ H ₁₃ NO ₂ S	5234-68-4	98.8	M+H	236.074	143.0161	93.0573	/	/	12.9	10
	3-Hydroxycarbofuran	3-羟基呋喃丹	丙酮	C ₁₂ H ₁₅ NO ₄	16655-82-6	99	M+H	238.1074	163.0754	135.0804	107.0491	145.0648	9.17	10
	Clothianidin	噻虫胺	丙酮	C ₆ H ₈ ClN ₅ O ₂ S	210880-92-5	99.3	M+H	250.016	131.9669	113.0168	169.0544	110.0713	9.01	10
	Cyromazine	环丙氨嗪	丙酮	C ₆ H ₁₀ N ₆	66215-27-8	99.4	M+H	167.104	85.0509	125.0822	108.0556	83.0604	3.63	10
	Diuron	敌草隆	丙酮	C ₉ H ₁₀ Cl ₂ N ₂ O	330-54-1	98.7	M+H	233.0243	72.0444	159.9715	/	/	12.87	10
	Ethopabate	乙氧酰胺苯甲酯	丙酮	C ₁₂ H ₁₅ NO ₄	59-06-3	98.8	M+H	238.1074	206.0812	164.0706	136.0393	/	10.43	5
	Fipronil	氟虫腈	丙酮	C ₁₂ H ₄ Cl ₂ F ₆ N ₄ OS	120068-37-3	98.2	M-H	434.9314	329.9585	249.9585	183.0165	/	10.38	10
	Fluridone	氟啶草酮	丙酮	C ₁₉ H ₁₄ F ₃ NO	59756-60-4	98.8	M+H	330.11	310.1038	290.0976	242.0964	115.0542	13.82	10
	Acephate	乙酰甲胺磷	丙酮	C ₄ H ₁₀ NO ₃ PS	30560-19-1	99.8	M+H	184.0192	142.9926	112.9997	/	/	5.91	10
	Hexazinone	环嗪酮	丙酮	C ₁₂ H ₂₀ N ₄ O ₂	51235-04-2	98.7	M+H	253.1659	171.0877	71.0604	85.0760	/	10.68	10
	Imazalil	抑霉唑	丙酮	C ₁₄ H ₁₄ Cl ₂ N ₂ O	35554-44-0	99	M+H	297.0556	158.9763	255.0086	200.9869	172.9919	10.48	10
	Imidacloprid	吡虫啉	丙酮	C ₉ H ₁₀ ClN ₅ O ₂	138261-41-3	98.7	M+H	256.0596	209.0589	175.0979	84.0556	210.0667	9.3	10
	Linuron	利谷隆	丙酮	C ₉ H ₁₀ Cl ₂ N ₂ O ₂	330-55-2	98.8	M+H	249.0192	159.9715	182.0241	160.9794	132.9606	14.38	10
Metribuzin	噻草酮	丙酮	C ₈ H ₁₄ N ₄ OS	21087-64-9	99.6	M+H	215.0961	187.1012	131.0386	84.0808	89.0168	11.99	5	

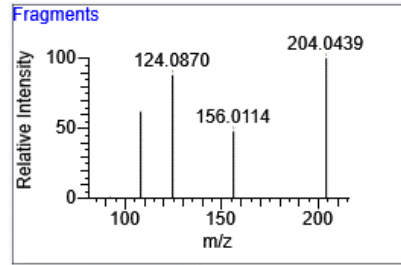
	Myclobutanil	腈菌唑	丙酮	C ₁₅ H ₁₇ ClN ₄	88671-89-0	99.6	M+H	289.1215	70.04	125.0153	151.0309	220.0888	14.48	5
	Acetamiprid	啉虫脒	丙酮	C ₁₀ H ₁₁ ClN ₄	135410-20-7	98.3	M+H	223.0745	126.0105	98.9997	90.0338	72.9841	9.58	10
	Norflurazon	氟草敏	丙酮	C ₁₂ H ₉ ClF ₃ N ₃ O	27314-13-2	97.9	M+H	304.0459	284.0397	160.0369	87.9948	264.0334	13	10
	Propyzamide	炔苯酰草胺	丙酮	C ₁₂ H ₁₁ Cl ₂ NO	23950-58-5	99.2	M+H	256.0291	189.9821	172.9556	146.9763	/	14.94	50
	Atrazine	莠去津	丙酮	C ₈ H ₁₄ ClN ₅	1912-24-9	97	M+H	216.1011	174.0541	96.0556	104.0010	132.0323	12.79	5
	Simazine	西玛津	丙酮	C ₇ H ₁₂ ClN ₅	122-34-9	97.3	M+H	202.0854	132.0323	104.001	96.0556	71.0604	11.48	5
	Atrazine-desethyl	去乙基锈去津	丙酮	C ₆ H ₁₀ ClN ₅	6190-65-4	98	M+H	188.0698	146.0228	104.001	110.0461	/	9.46	10
	Azoxystrobin	啞菌酯	丙酮	C ₂₂ H ₁₇ N ₅ O ₅	131860-33-8	98.7	M+H	404.1241	344.104	329.0795	372.0979	328.0717	14.45	5
	Benoxacor	解草啉	丙酮	C ₁₁ H ₁₁ Cl ₂ NO ₂	98730-04-2	98.9	M+H	260.024	149.0835	120.0444	134.0600	150.0913	14.94	50
	Valnemulin	沃尼妙林	甲醇	C ₃₁ H ₅₂ N ₂ O ₅ S	133868-46-9	98.6	M+H	565.367	263.1417	72.0808	147.0473	/	10.96	5
其它类	Scopolamine	东莨菪碱	甲醇	C ₁₇ H ₂₁ NO ₄	51-34-3	100	M+H	304.1543	156.1019	138.0913	121.0648	103.0542	7	5
	Atropine	阿托品	甲醇	C ₁₇ H ₂₃ NO ₃	51-55-8	99.7	M+H	290.1751	124.1121	93.0699	/	/	7.61	1

附录 B
(资料性附录)

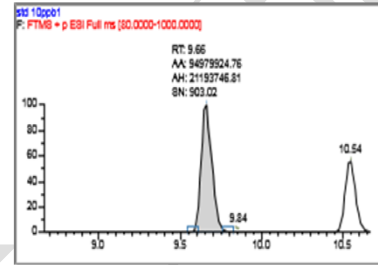
127种药物 (10 ng/mL) 全扫描加自动触发二级扫描模式下的一级提取离子色谱图和二级质谱图



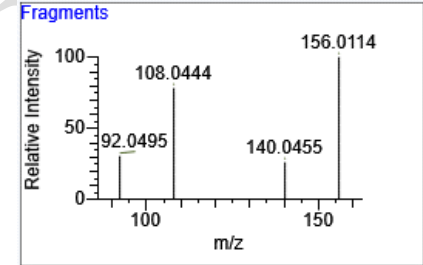
sulfadimidine 磺胺二甲嘧啶



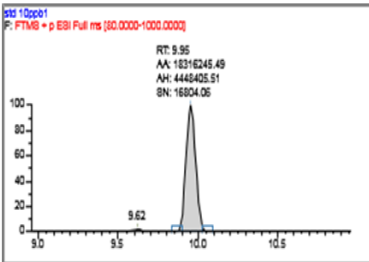
sulfadimidine 磺胺二甲嘧啶



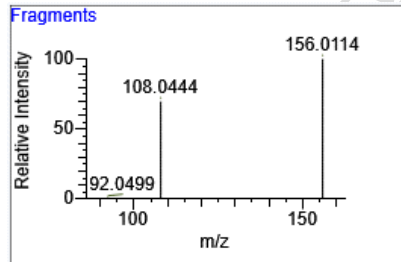
Sulfadoxine 磺胺邻二甲氧嘧啶



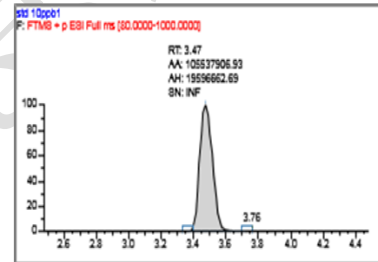
Sulfadoxine 磺胺邻二甲氧嘧啶



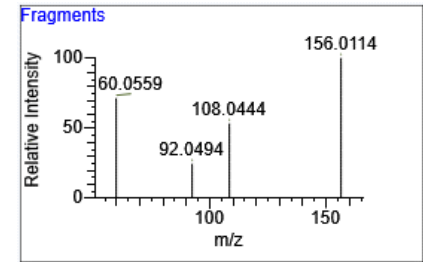
Sulfafurazole 磺胺异噁唑



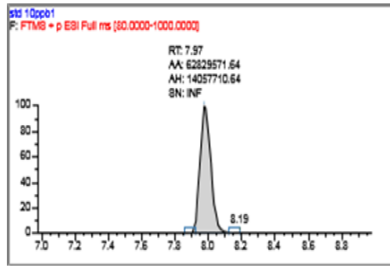
Sulfafurazole 磺胺异噁唑



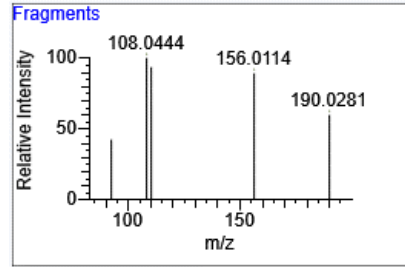
Sulfaguanidine 磺胺脒



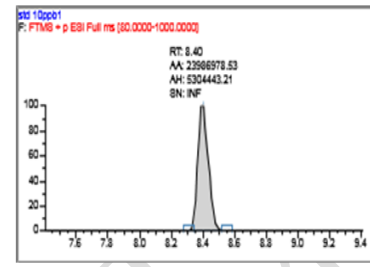
Sulfaguanidine 磺胺脒



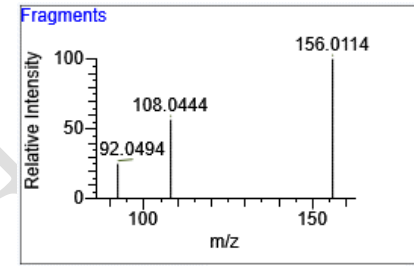
Sulfamerazine 磺胺甲噻啉



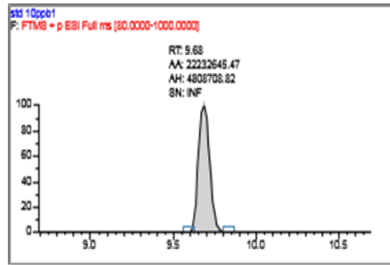
Sulfamerazine 磺胺甲噻啉



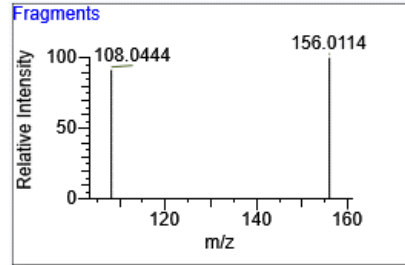
Sulfamethizole 磺胺甲噻二唑



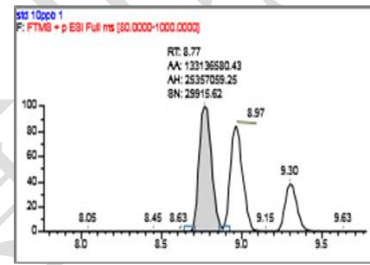
Sulfamethizole 磺胺甲噻二唑



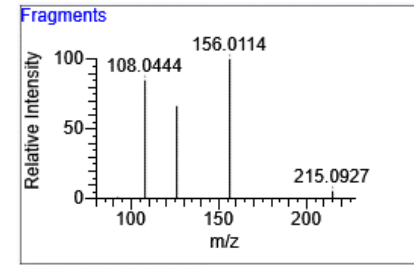
Sulfamethoxazole 磺胺甲恶唑



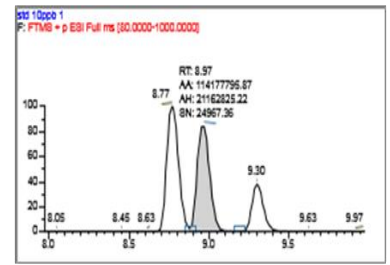
Sulfamethoxazole 磺胺甲恶唑



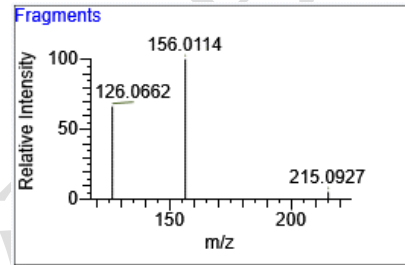
sulfamethoxydiazine 磺胺对甲氧嘧啶



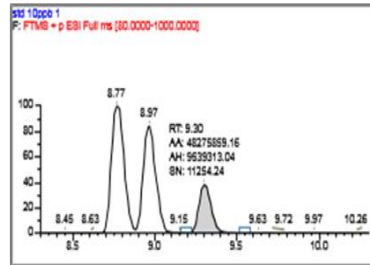
sulfamethoxydiazine 磺胺对甲氧嘧啶



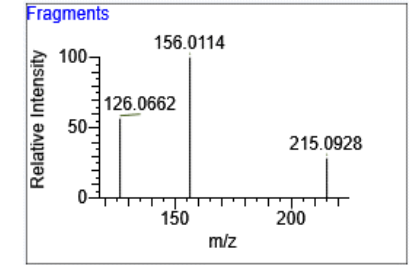
Sulfamethoxypridazin 磺胺甲氧吡嗪



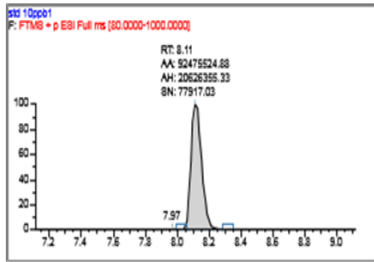
Sulfamethoxypridazin 磺胺甲氧吡嗪



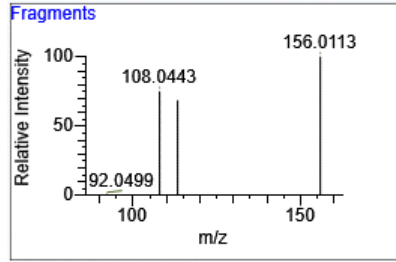
Sulfanomethoxine 磺胺间甲氧嘧啶



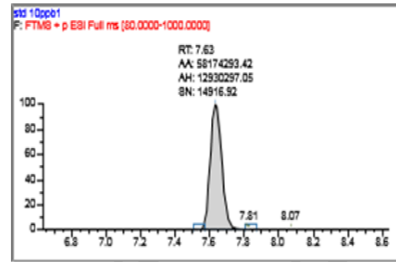
Sulfanomethoxine 磺胺间甲氧嘧啶



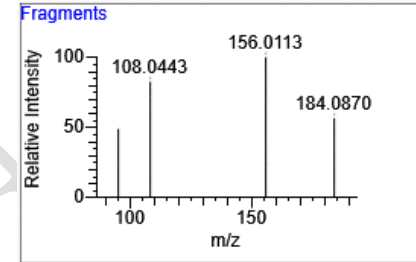
Sulfamoxole 磺胺二甲唑



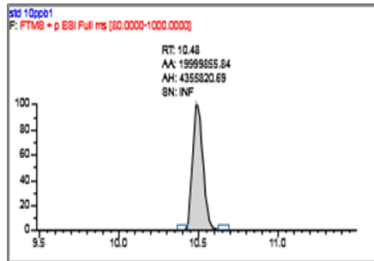
Sulfamoxole 磺胺二甲唑



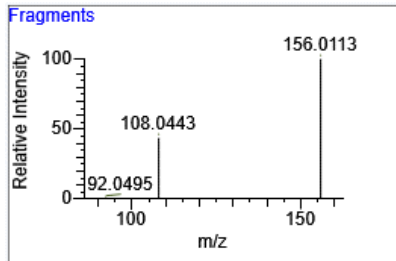
Sulfapyridine 磺胺吡啶



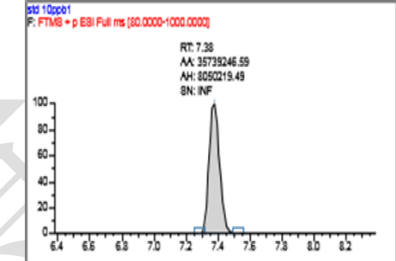
Sulfapyridine 磺胺吡啶



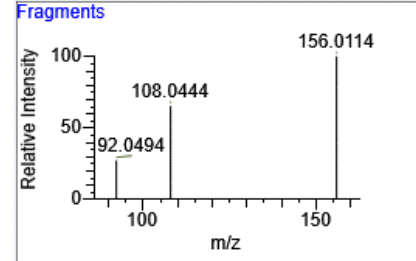
Sulfaquinoxaline 磺胺喹恶啉



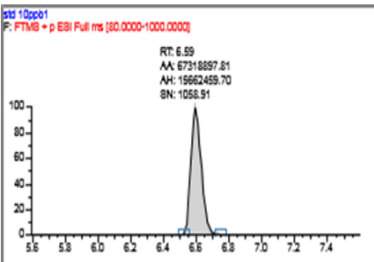
Sulfaquinoxaline 磺胺喹恶啉



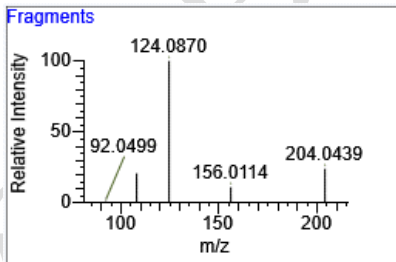
Sulfathiazole 磺胺噻唑



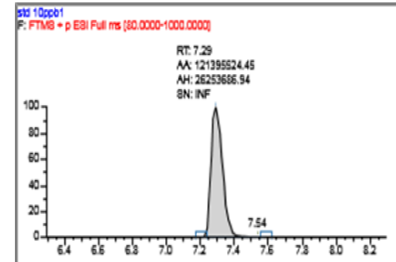
Sulfathiazole 磺胺噻唑



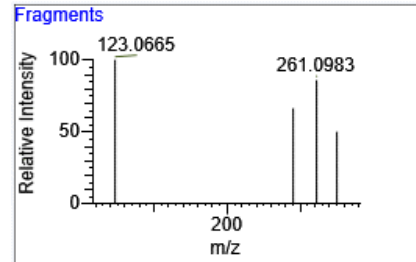
sulfisomidine 磺胺二甲异噻啉



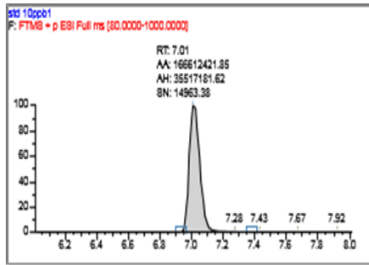
sulfisomidine 磺胺二甲异噻啉



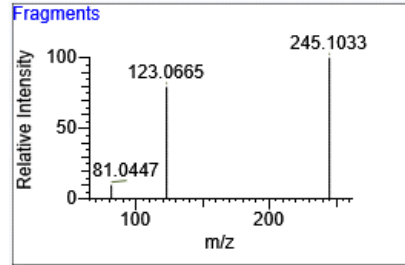
Trimethoprim 甲氧苄啶



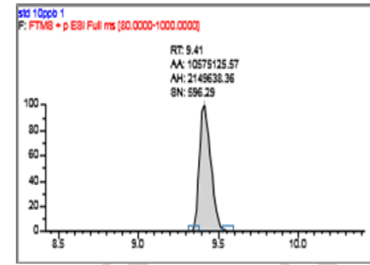
Trimethoprim 甲氧苄啶



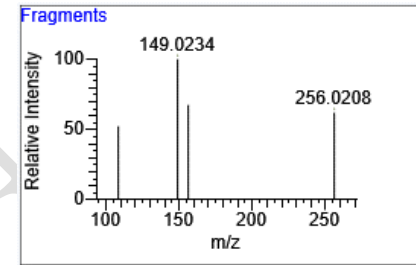
Diaveridine 二甲氧苄啉



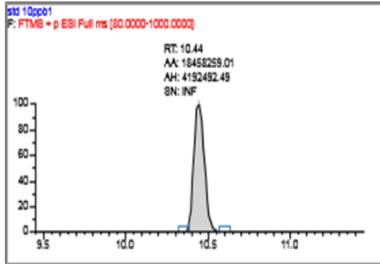
Diaveridine 二甲氧苄啉



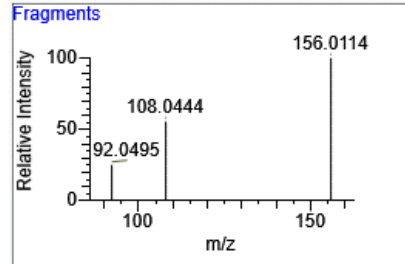
phthalylsulfathiazole 酞磺胺噻唑



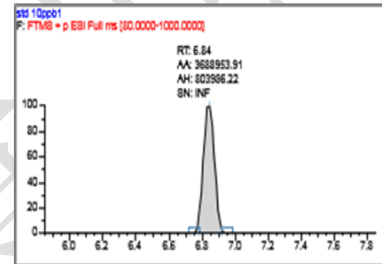
phthalylsulfathiazole 酞磺胺噻唑



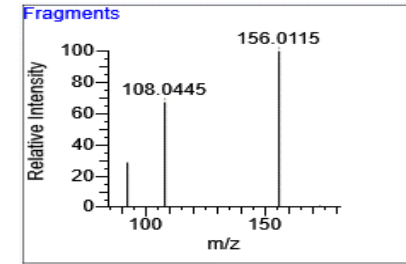
Sulfabenzamide 苯酰磺胺



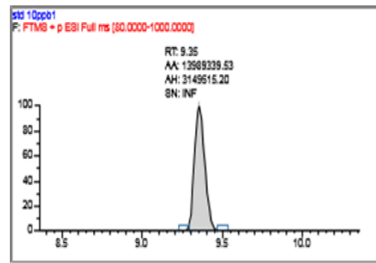
Sulfabenzamide 苯酰磺胺



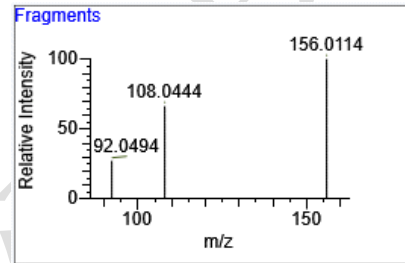
Sulfacetamide 磺胺醋酰



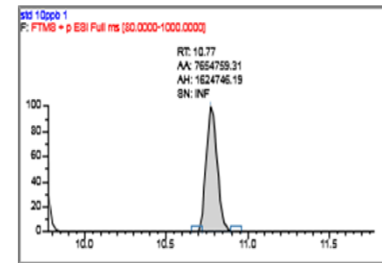
Sulfacetamide 磺胺醋酰



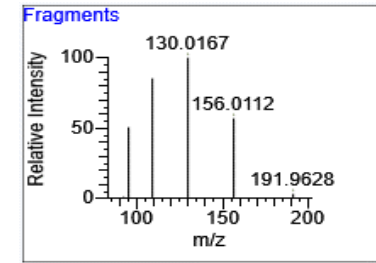
Sulfachloropyridazine 磺胺氯吡嗪



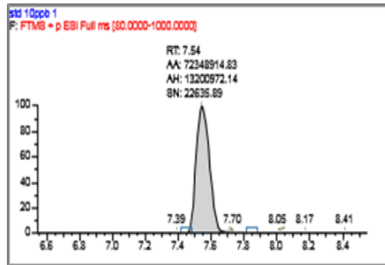
Sulfachloropyridazine 磺胺氯吡嗪



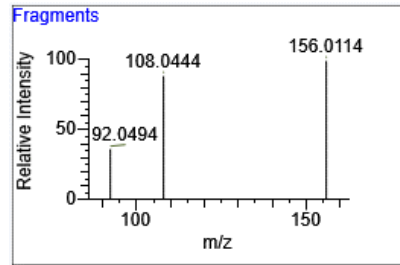
Sulfaclozine 磺胺氯吡嗪



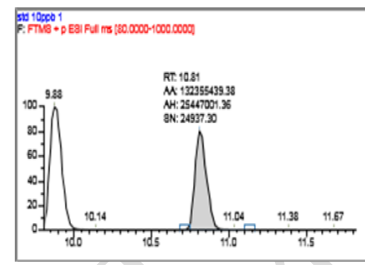
Sulfaclozine 磺胺氯吡嗪



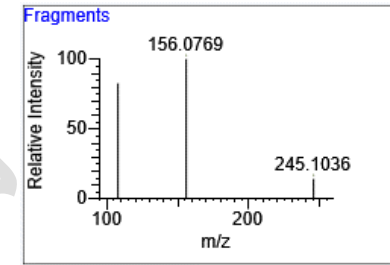
Sulfadiazine 磺胺嘧啶



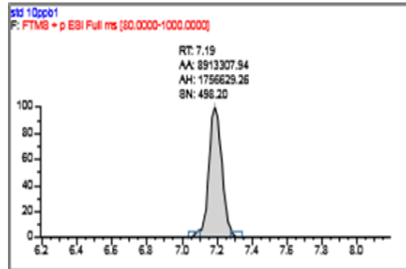
Sulfadiazine 磺胺嘧啶



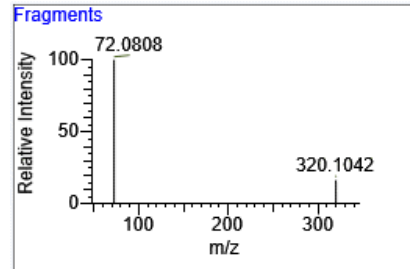
Sulfadimethoxyprymidine 磺胺间二
甲氧嘧啶



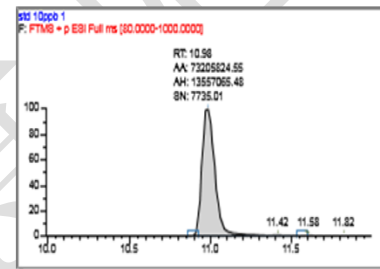
Sulfadimethoxyprymidine 磺胺间二
甲氧嘧啶



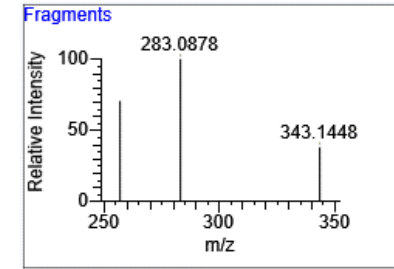
Marbofloxacin 马波沙星



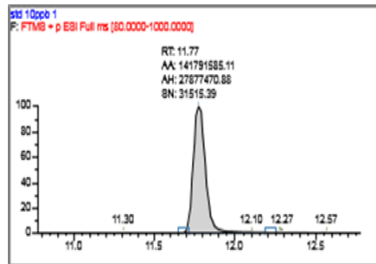
Marbofloxacin 马波沙星



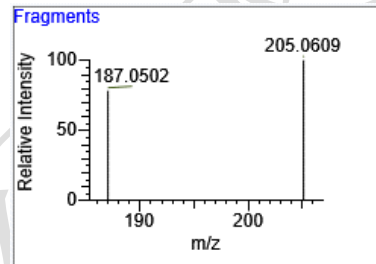
Nadifloxacin 那氟沙星



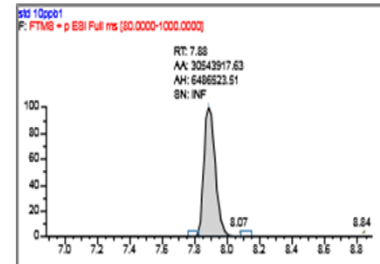
Nadifloxacin 那氟沙星



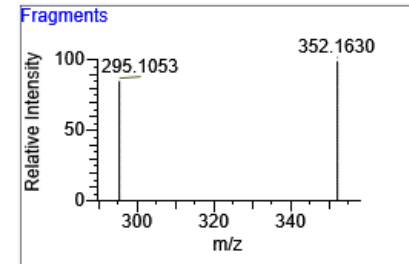
Nalidixic acid 萘啶酸



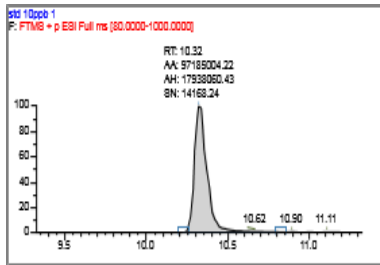
Nalidixic acid 萘啶酸



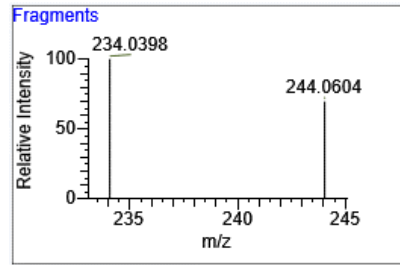
Orbifloxacin 奥比沙星



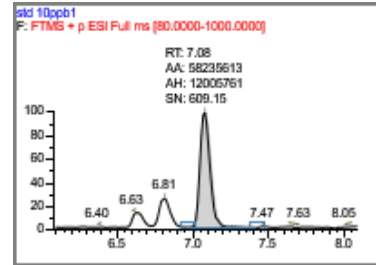
Orbifloxacin 奥比沙星



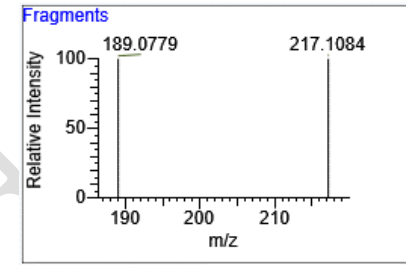
Oxolinic acid 恶喹酸



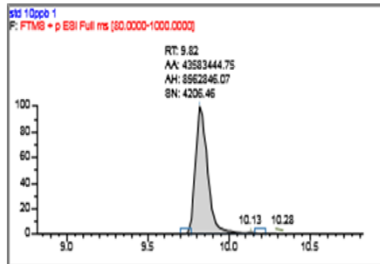
Oxolinic acid 恶喹酸



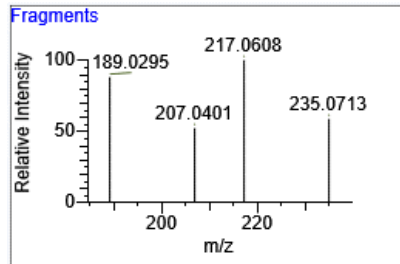
Pipemidic Acid 吡哌酸



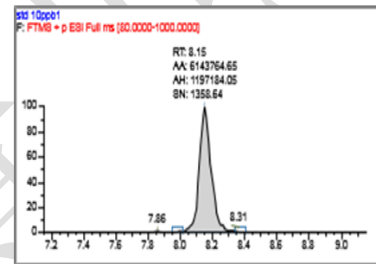
Pipemidic Acid 吡哌酸



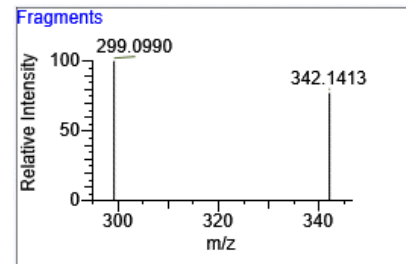
Cinoxacin 西诺沙星



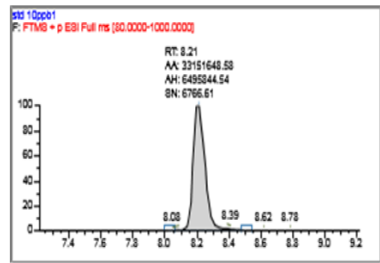
Cinoxacin 西诺沙星



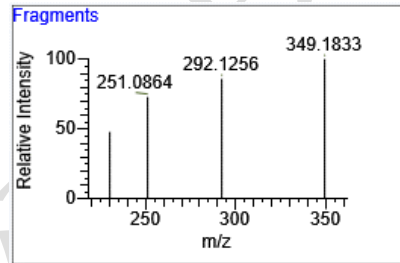
Sarafloxacin 沙拉沙星



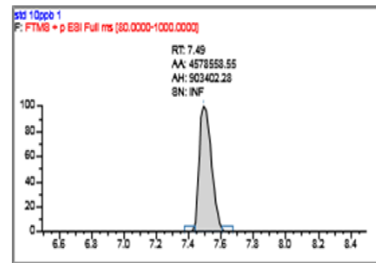
Sarafloxacin 沙拉沙星



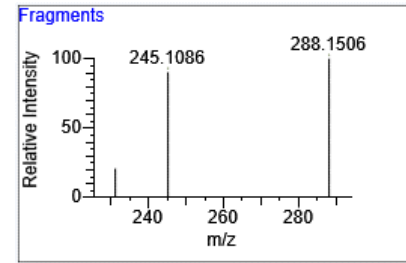
Sparfloxacin 司帕沙星



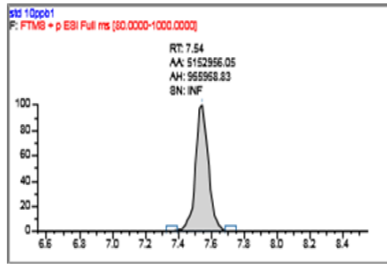
Sparfloxacin 司帕沙星



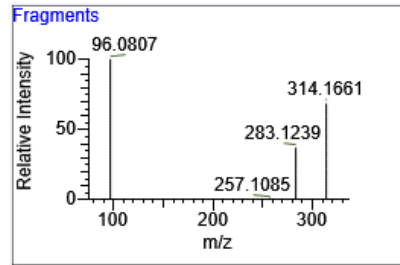
Ciprofloxacin 环丙沙星



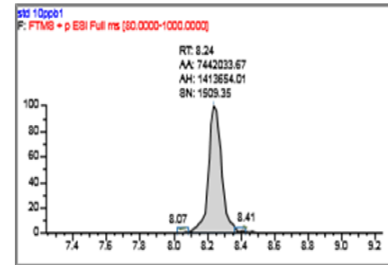
Ciprofloxacin 环丙沙星



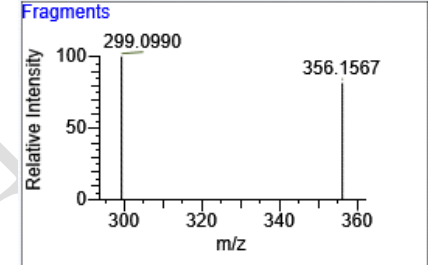
Danofloxacin 达氟沙星



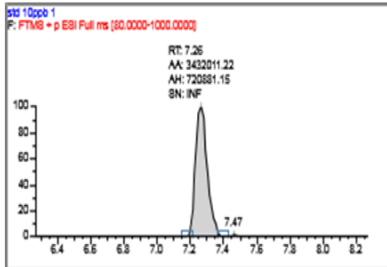
Danofloxacin 达氟沙星



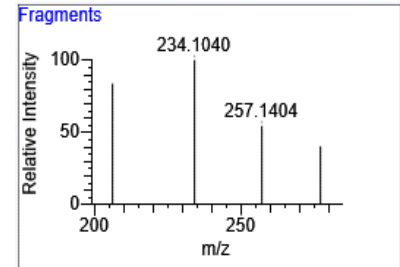
Difloxacin 二氟沙星



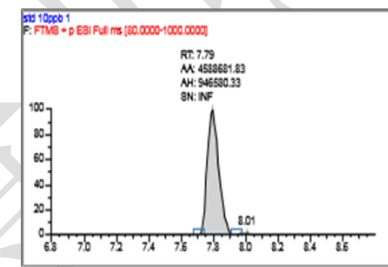
Difloxacin 二氟沙星



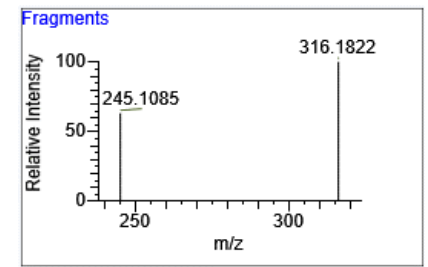
Enoxacin 依诺沙星



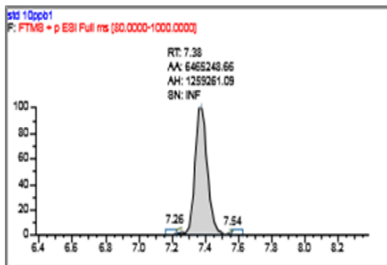
Enoxacin 依诺沙星



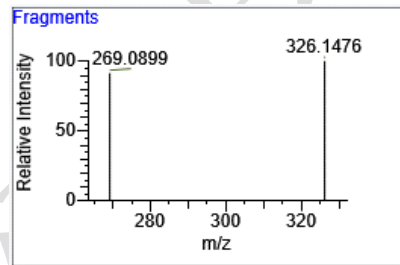
Enrofloxacin 恩诺沙星



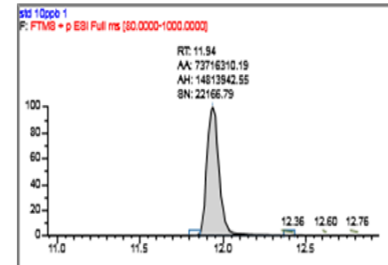
Enrofloxacin 恩诺沙星



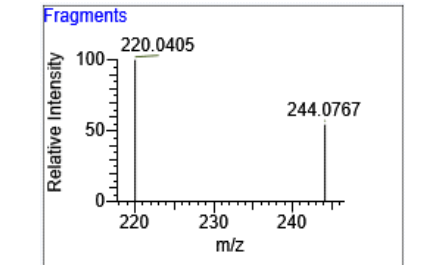
Fleroxacin 氟罗沙星



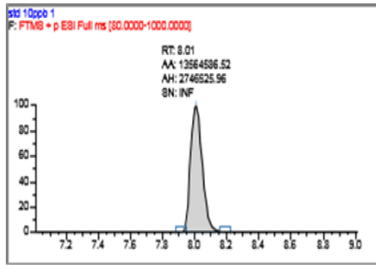
Fleroxacin 氟罗沙星



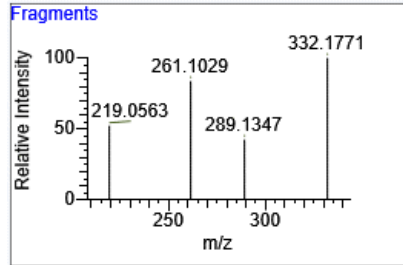
Flumequine 氟甲喹



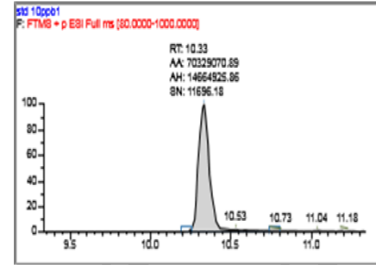
Flumequine 氟甲喹



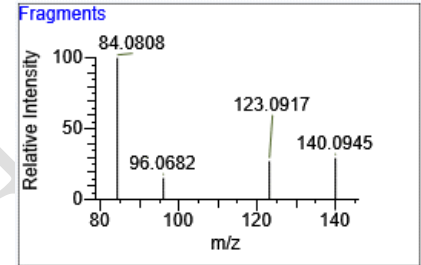
Gatifloxacin 加替沙星



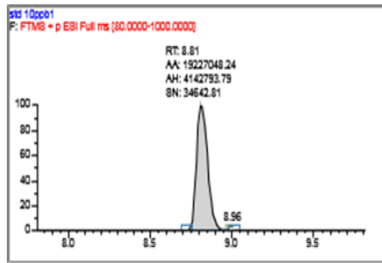
Gatifloxacin 加替沙星



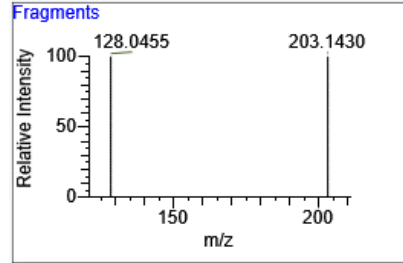
Iprnidazole 异丙硝唑



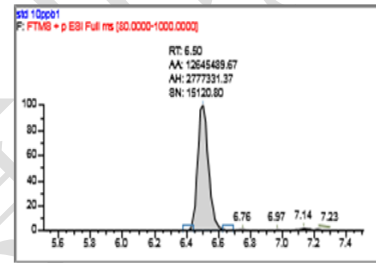
Iprnidazole 异丙硝唑



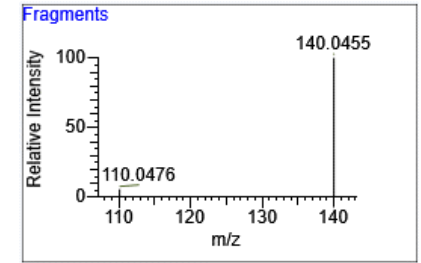
Ornidazole 奥硝唑



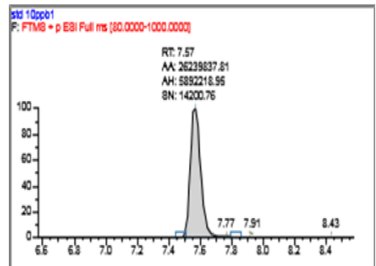
Ornidazole 奥硝唑



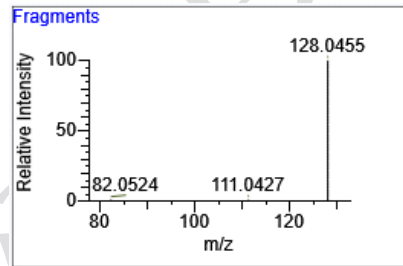
HMMI 羟基地美硝唑



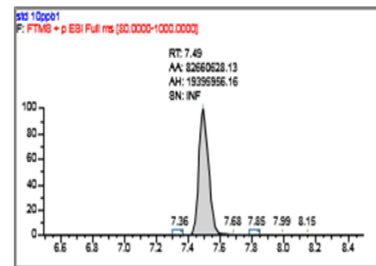
HMMI 羟基地美硝唑



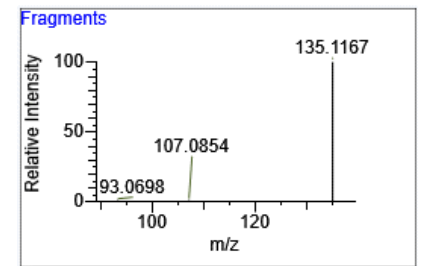
Secnidazole 塞克硝唑



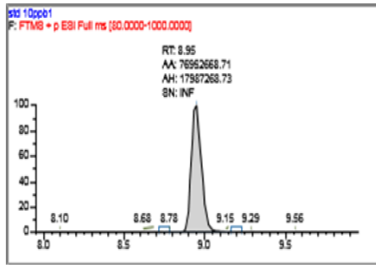
Secnidazole 塞克硝唑



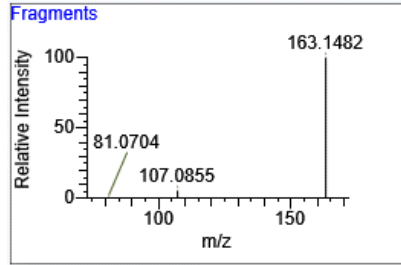
Amantadine 金刚烷胺



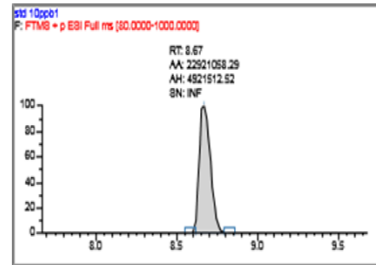
Amantadine 金刚烷胺



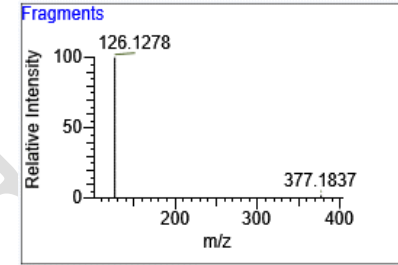
Rimantadine 金刚乙胺



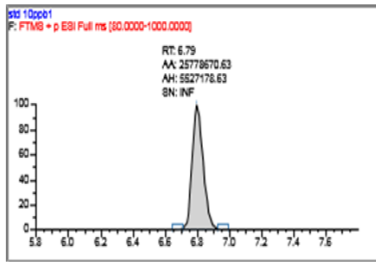
Rimantadine 金刚乙胺



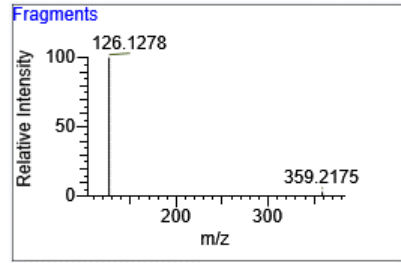
Clindamycin hydrochloride 克林霉素



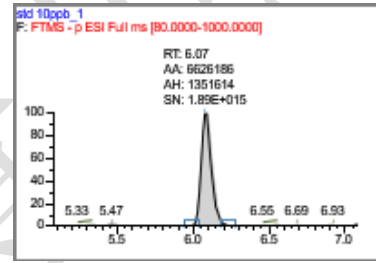
Clindamycin hydrochloride 克林霉素



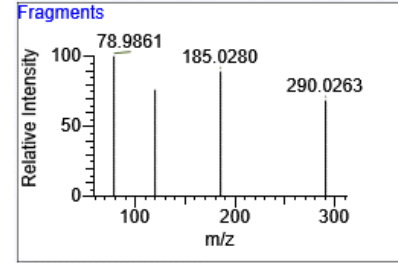
Lincomycin_林可霉素



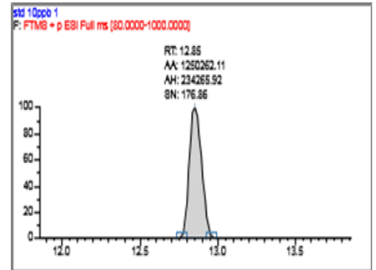
Lincomycin_林可霉素



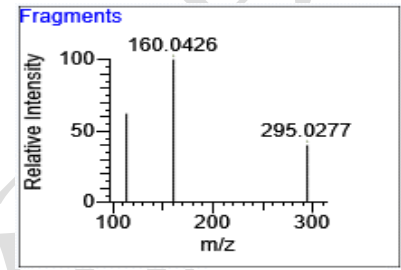
Thiamphenicol 甲砒霉素



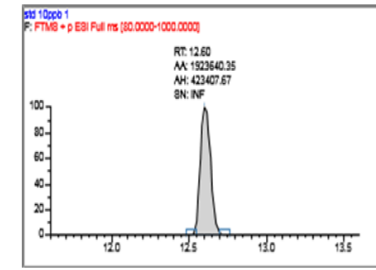
Thiamphenicol 甲砒霉素



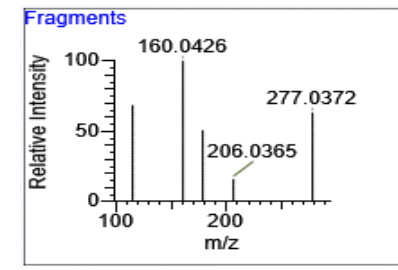
Flucloxacillin 氟氯西林



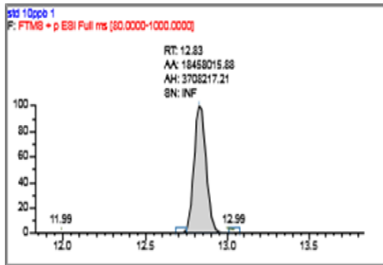
Flucloxacillin 氟氯西林



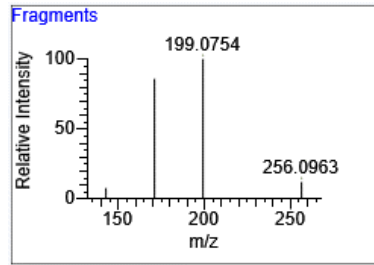
Cloxacillin 氯唑西林



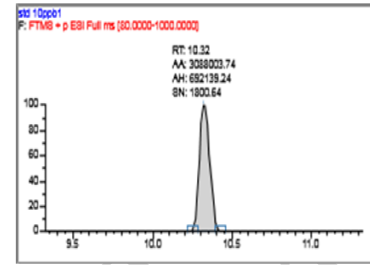
Cloxacillin 氯唑西林



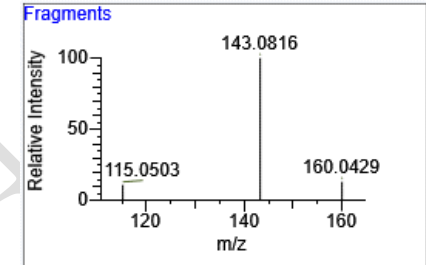
Nafcillin 萘夫西林



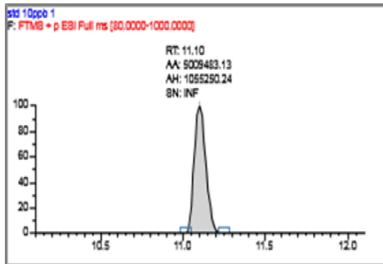
Nafcillin 萘夫西林



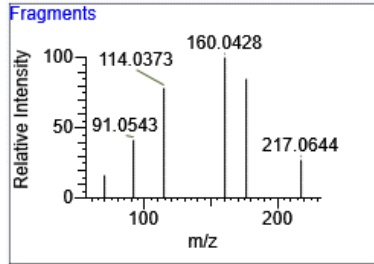
Pipril 派拉西林



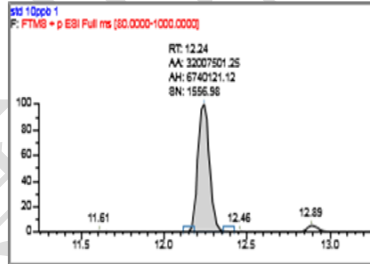
Pipril 派拉西林



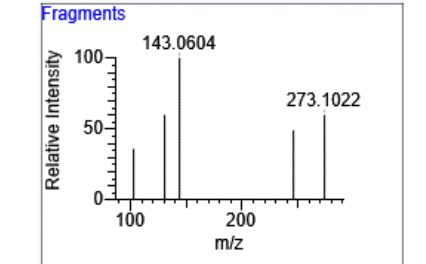
Penicillin G 青霉素 G



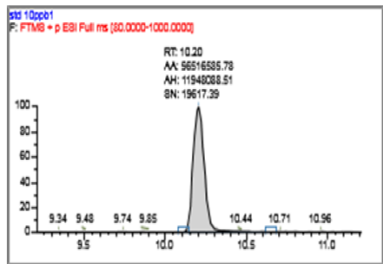
Penicillin G 青霉素 G



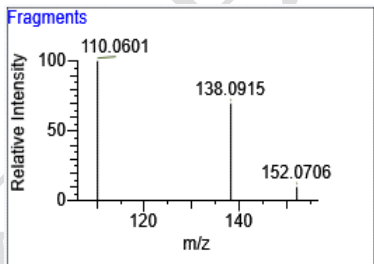
Quinocetone 喹烯酮



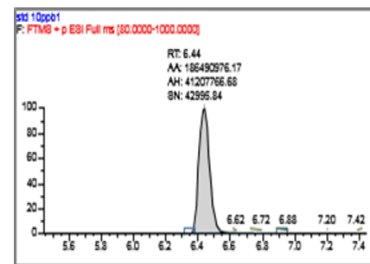
Quinocetone 喹烯酮



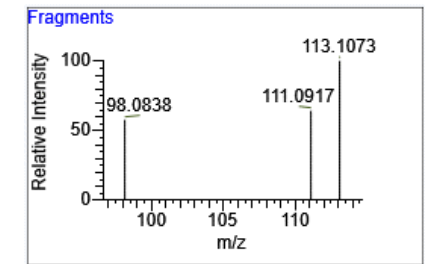
Phenacetin 非那西丁



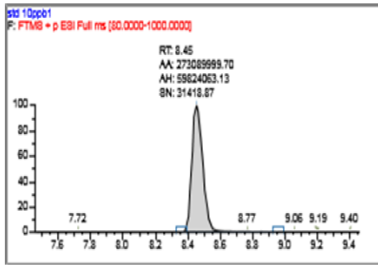
Phenacetin 非那西丁



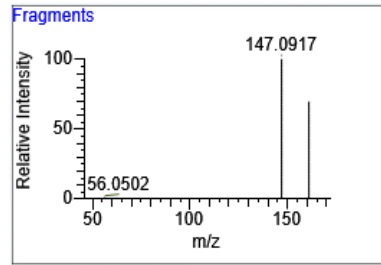
Aminophenazone 氨基比林



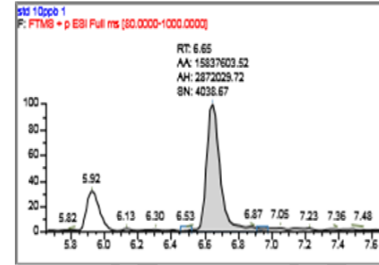
Aminophenazone 氨基比林



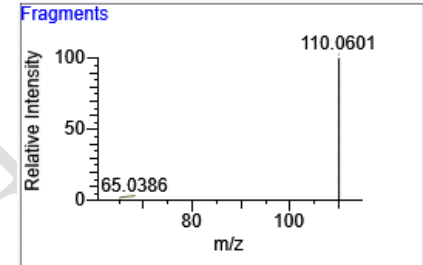
Antipyrine 安替比林



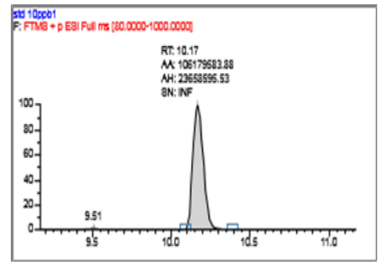
Antipyrine 安替比林



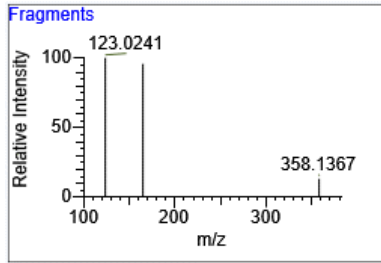
Paracetamol 对乙酰氨基酚



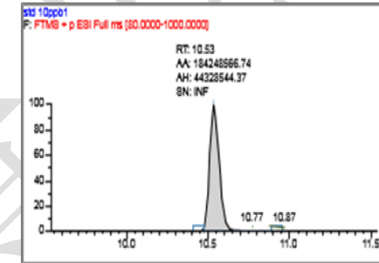
Paracetamol 对乙酰氨基酚



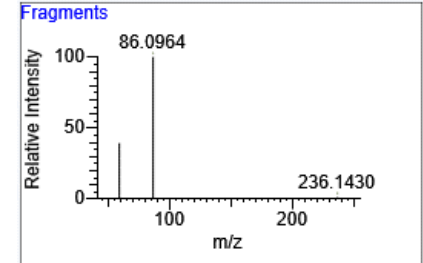
Haloperidol 氟哌啶醇



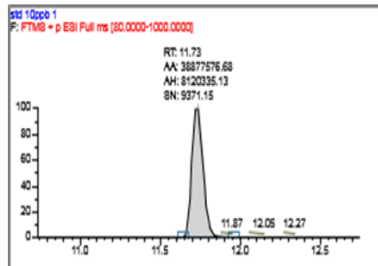
Haloperidol 氟哌啶醇



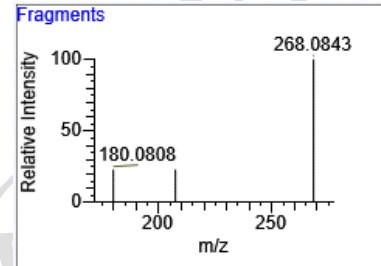
Imipramine 丙咪嗪



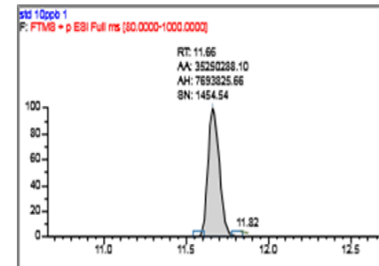
Imipramine 丙咪嗪



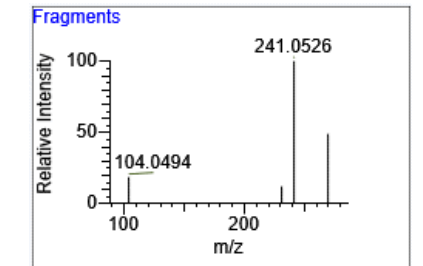
Nitrazepam 硝西泮



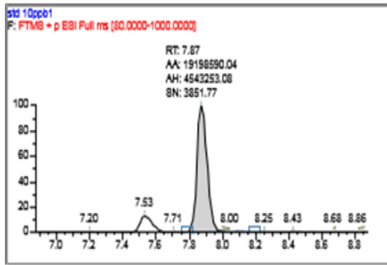
Nitrazepam 硝西泮



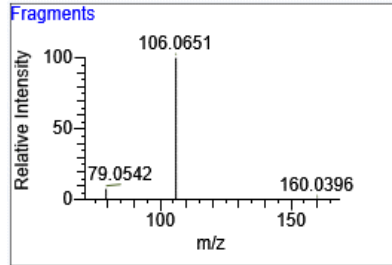
Oxazepam 奥沙西泮



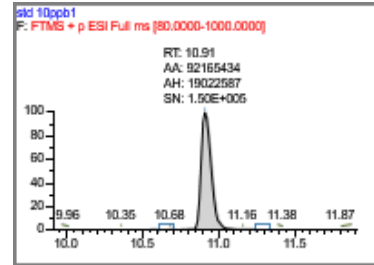
Oxazepam 奥沙西泮



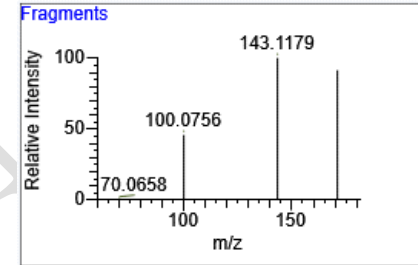
Pemoline 匹莫林



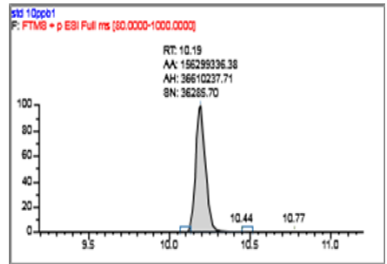
Pemoline 匹莫林



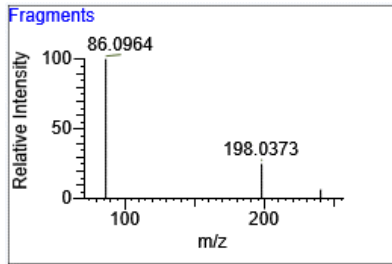
Prochlorperazine 奋乃静



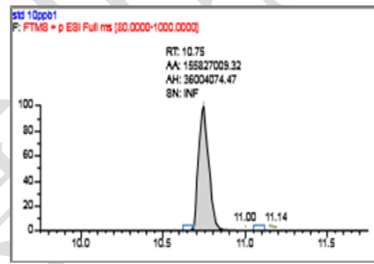
Prochlorperazine 奋乃静



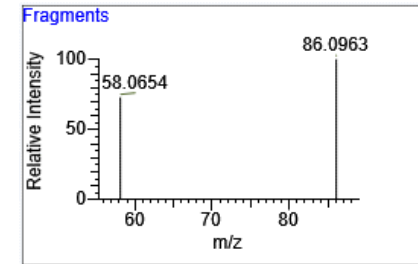
Promethazine 异丙嗪



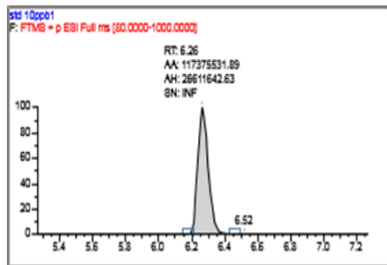
Promethazine 异丙嗪



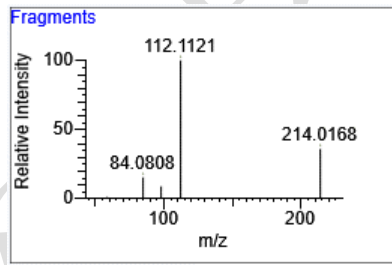
PROPIONYLPROMAZINE 丙酰丙嗪



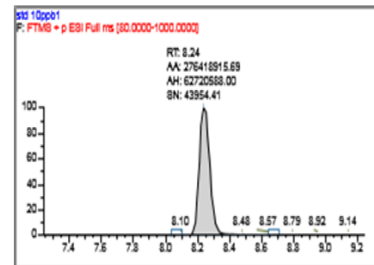
PROPIONYLPROMAZINE 丙酰丙嗪



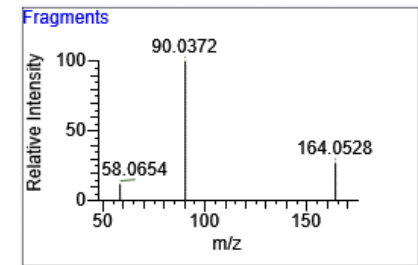
Sulpiride 舒必利



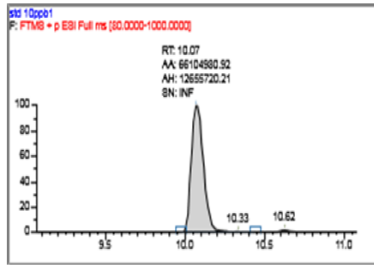
Sulpiride 舒必利



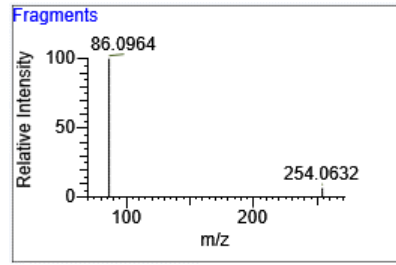
Xylazine 甲苯噻嗪



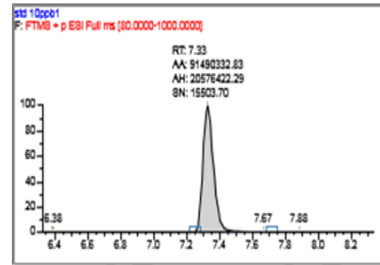
Xylazine 甲苯噻嗪



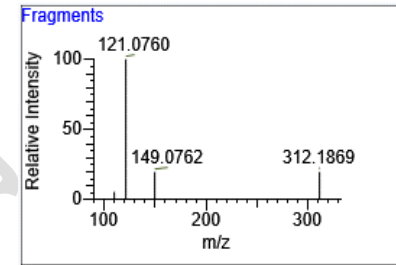
Acepromazine 乙酰丙嗪



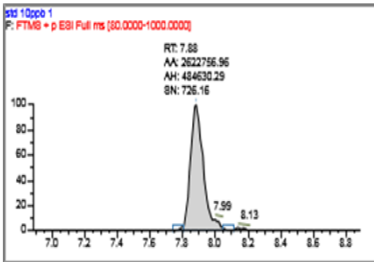
Acepromazine 乙酰丙嗪



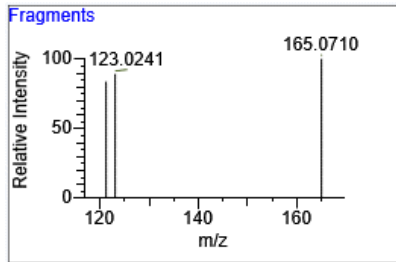
AZAPEROL 阿扎哌醇



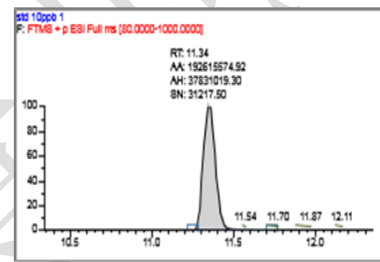
AZAPEROL 阿扎哌醇



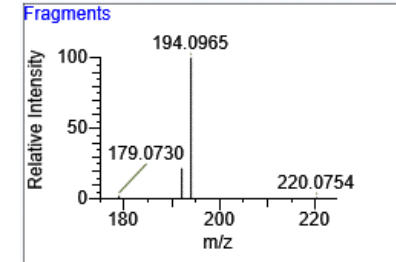
Azaperone 阿扎哌隆



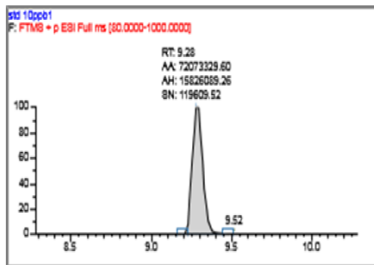
Azaperone 阿扎哌隆



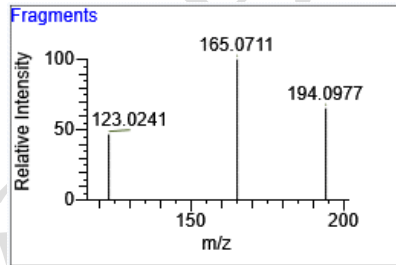
Carbamazepine 卡马西平



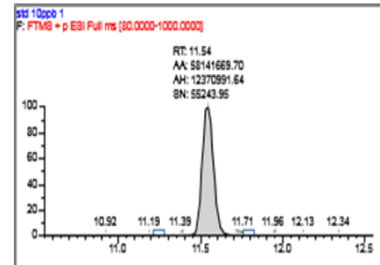
Carbamazepine 卡马西平



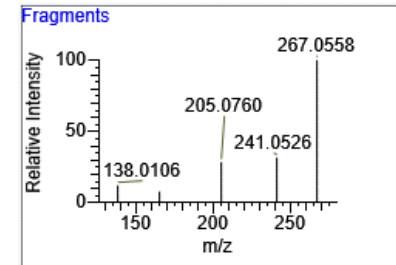
Droperidol 氟哌利多



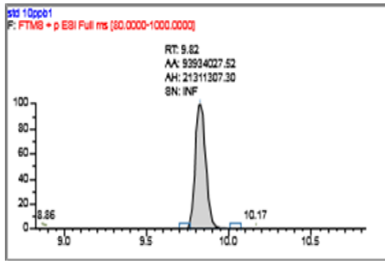
Droperidol 氟哌利多



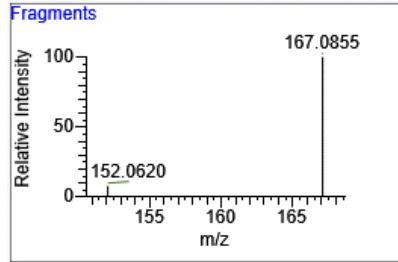
Estazolam 艾司唑仑



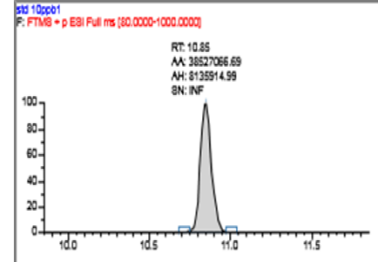
Estazolam 艾司唑仑



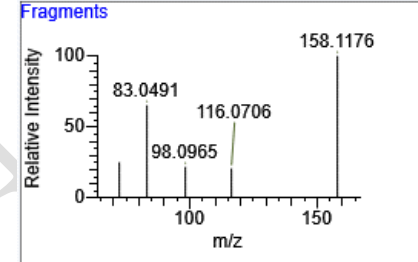
Diphenhydramine 苯海拉明



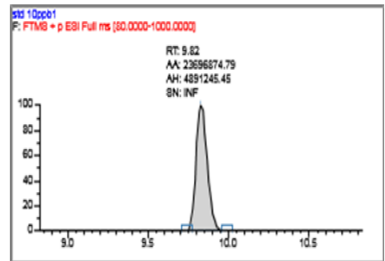
Diphenhydramine 苯海拉明



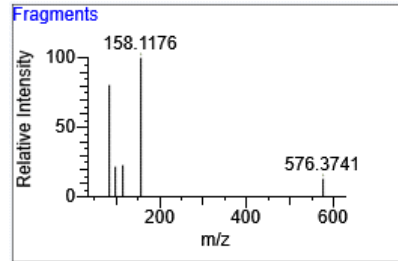
Clarithromycin 克拉霉素



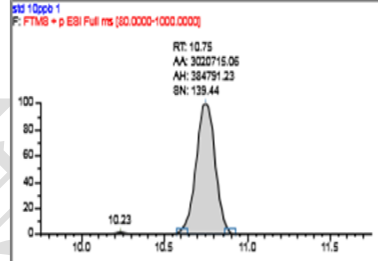
Clarithromycin 克拉霉素



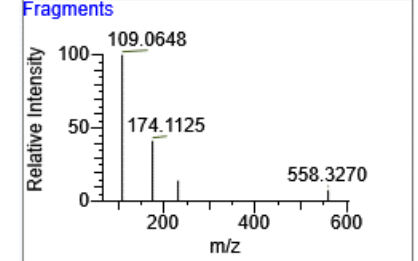
Erythromycin 红霉素



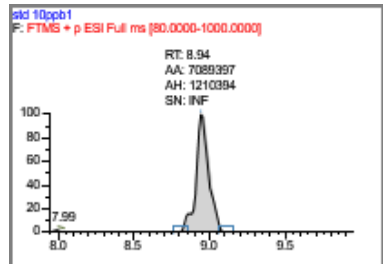
Erythromycin 红霉素



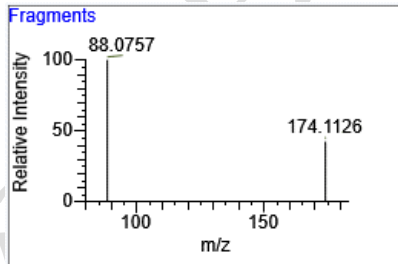
Kitasamycin 吉他霉素



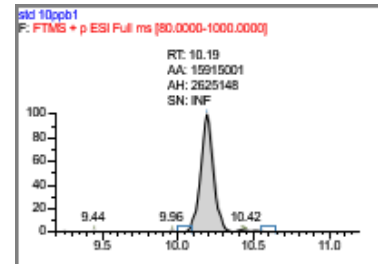
Kitasamycin 吉他霉素



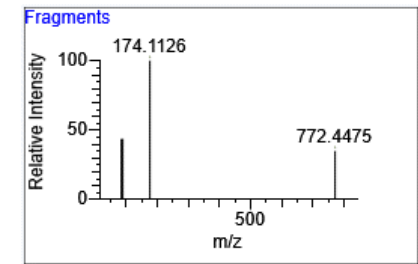
Tilmicosin 替米考星



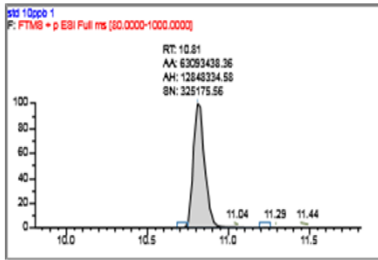
Tilmicosin 替米考星



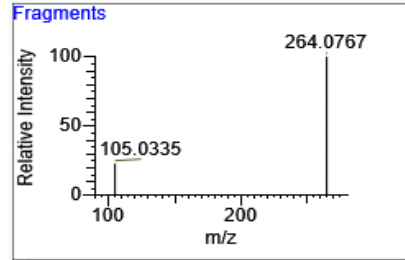
Tylosin A 泰乐菌素 A



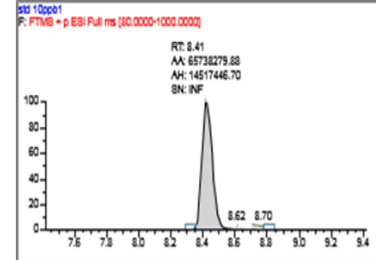
Tylosin A 泰乐菌素 A



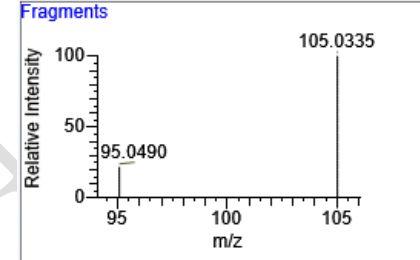
Mebendazole 甲苯达唑



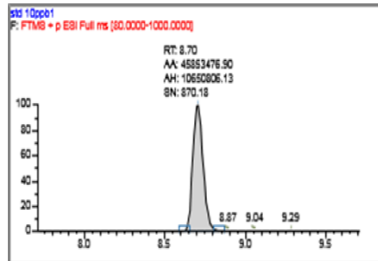
Mebendazole 甲苯达唑



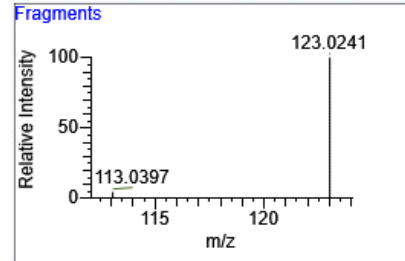
Mebendazole-amine 氨基甲苯达唑



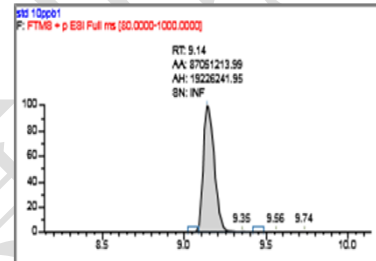
Mebendazole-amine 氨基甲苯达唑



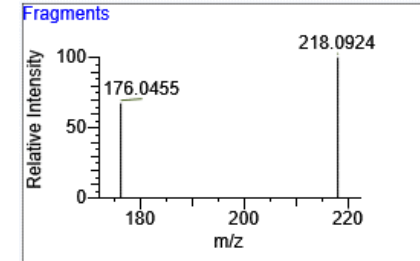
2-AMINOFLUBENDAZOLE 2-氨基氟苯咪唑



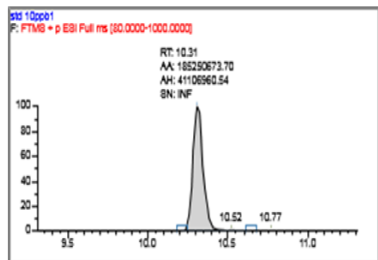
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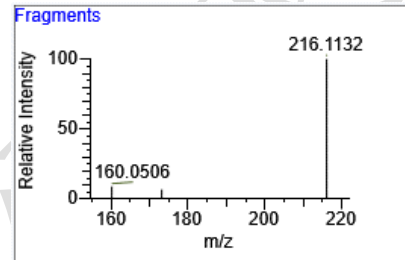
Oxibendazole 奥苯达唑



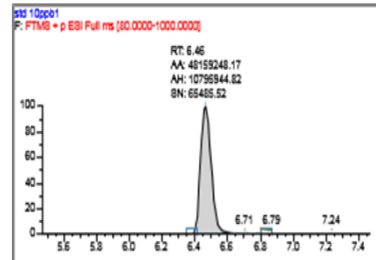
Oxibendazole 奥苯达唑



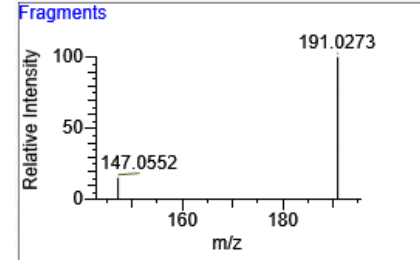
Parbendazole 帕苯咪唑



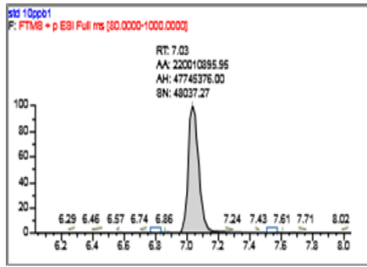
Parbendazole 帕苯咪唑



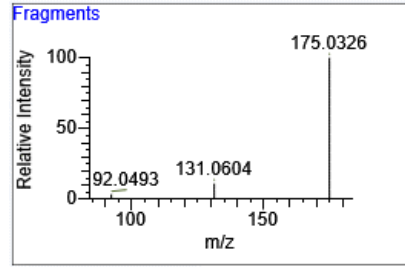
Thiabendazole-5-Hydroxy 5-羟基噻苯达唑



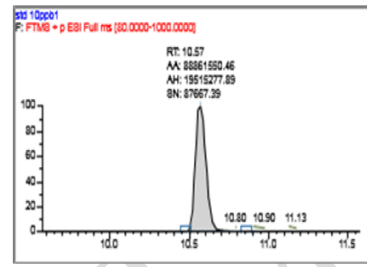
Thiabendazole-5-Hydroxy 5-羟基噻苯达唑



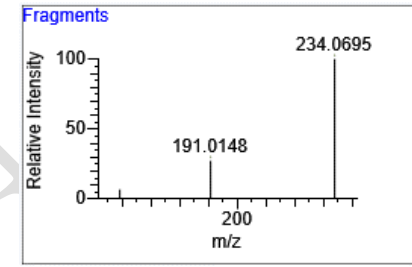
Thiabendazole 噻苯达唑



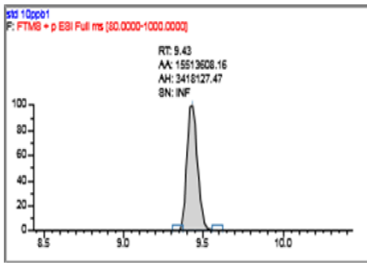
Thiabendazole 噻苯达唑



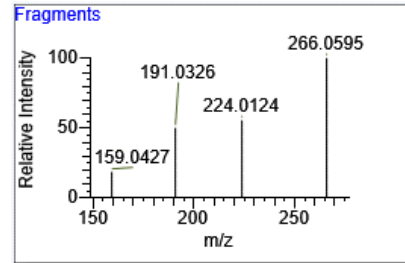
Albendazole 阿苯达唑



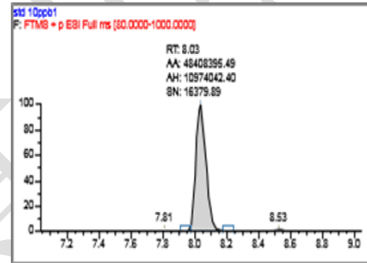
Albendazole 阿苯达唑



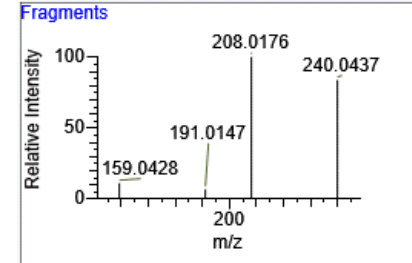
Albendazole sulfone 阿苯达唑砒



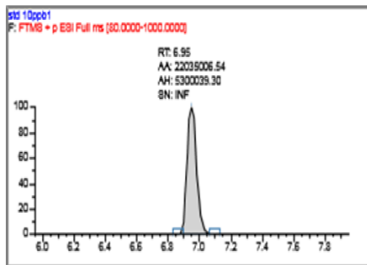
Albendazole sulfone 阿苯达唑砒



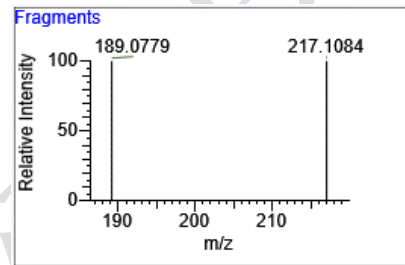
Albendazole sulfoxide 阿苯达唑亚砒



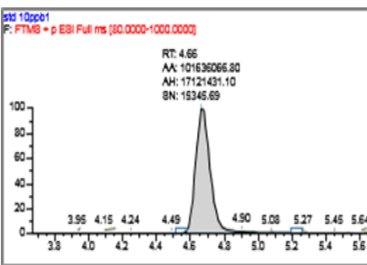
Albendazole sulfoxide 阿苯达唑亚砒



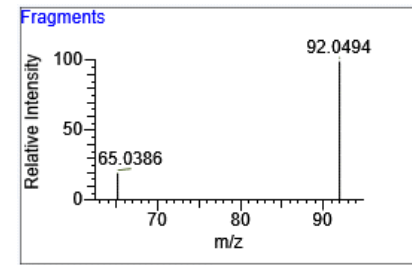
Albendazole-2-aminosulfone 阿苯达唑氨基砒



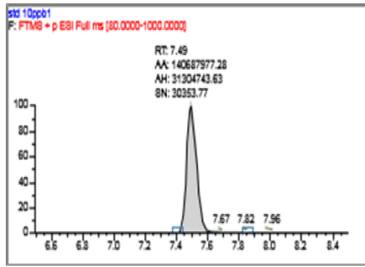
Albendazole-2-aminosulfone 阿苯达唑氨基砒



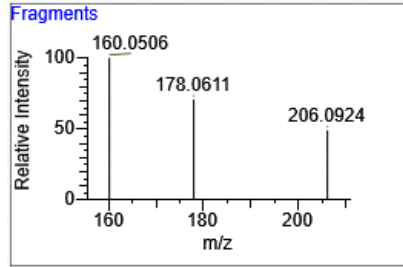
Benzimidazole 苯并咪唑



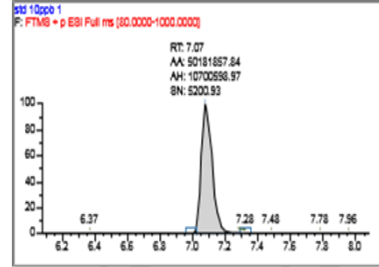
Benzimidazole 苯并咪唑



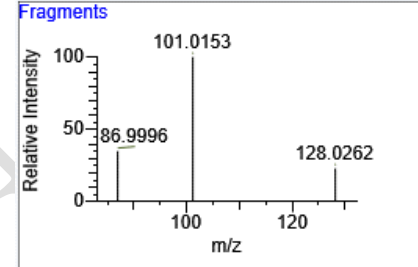
Lobendazole 洛苯达唑



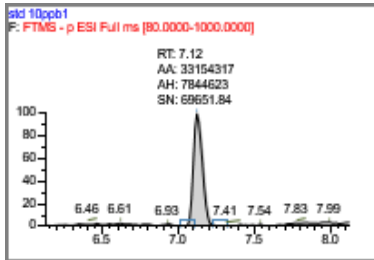
Lobendazole 洛苯达唑



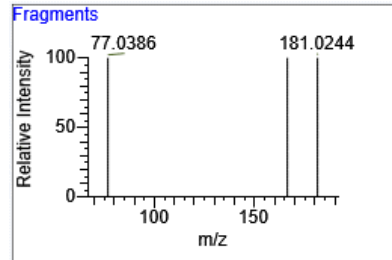
Clopidol 氯羟吡啶



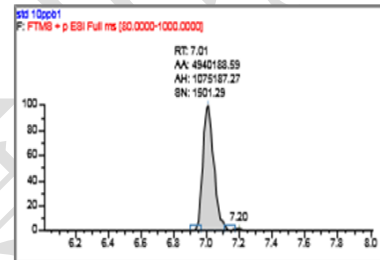
Clopidol 氯羟吡啶



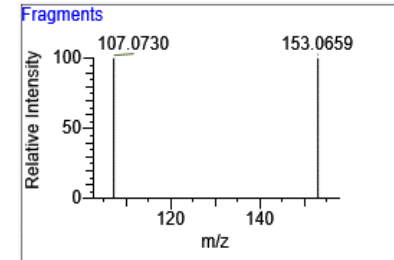
Dinitolmide 二硝托胺



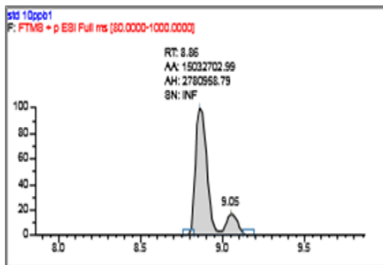
Dinitolmide 二硝托胺



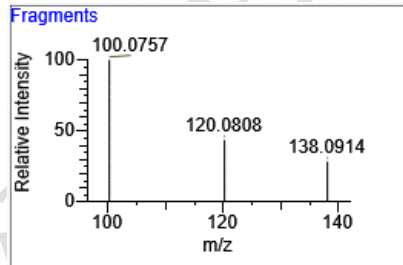
Benzamide 二硝托胺代谢物



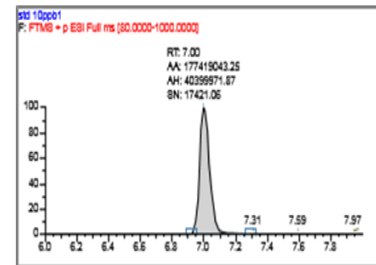
Benzamide 二硝托胺代谢物



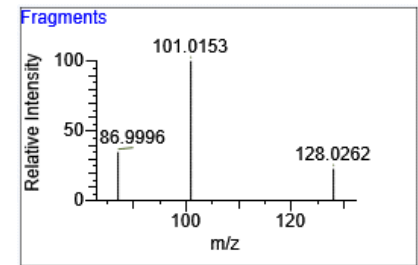
Halofuginone 常山酮



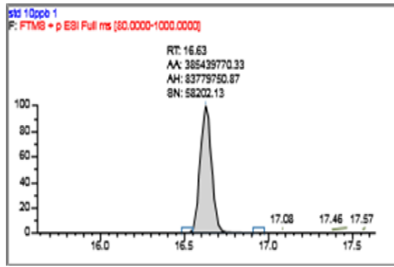
Halofuginone 常山酮



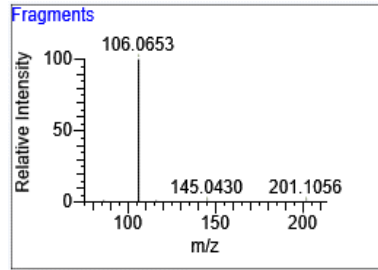
Levamisole 左旋咪唑



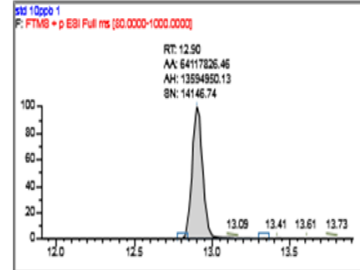
Levamisole 左旋咪唑



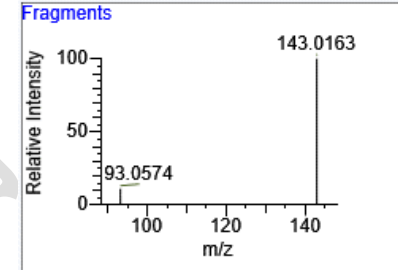
Buprofezin 噻嗪酮



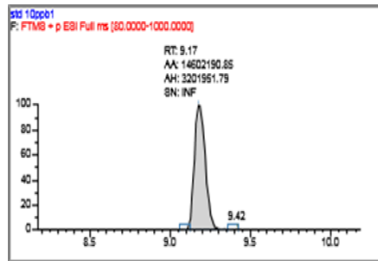
Buprofezin 噻嗪酮



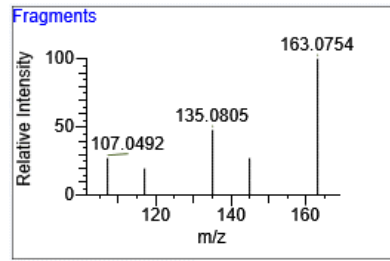
Carboxin 萎锈灵



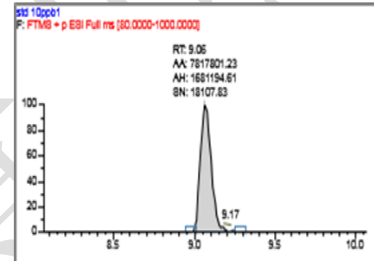
Carboxin 萎锈灵



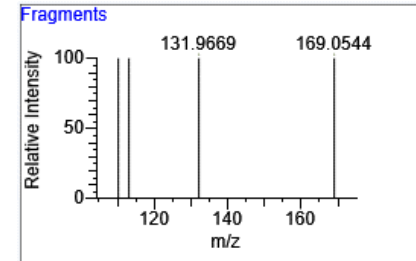
3-Hydroxycarbofuran/Carbofuran,
3OH- 3-羟基呋喃丹



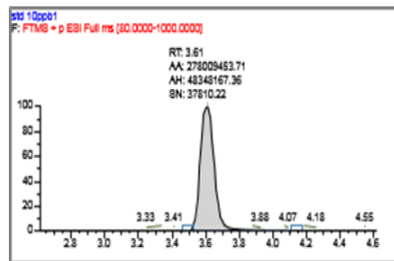
3-Hydroxycarbofuran/Carbofuran,
3OH- 3-羟基呋喃丹



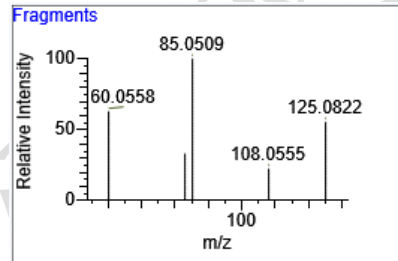
Clothianidin 噻虫胺



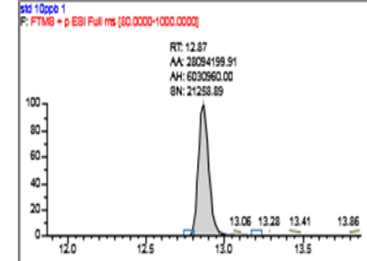
Clothianidin 噻虫胺



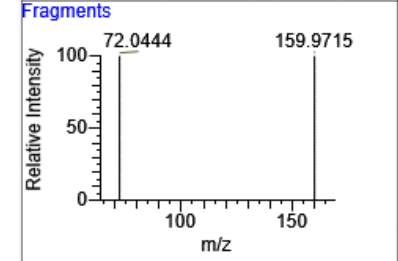
Cyromazine 环丙氨嗪



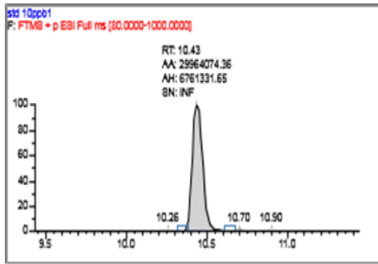
Cyromazine 环丙氨嗪



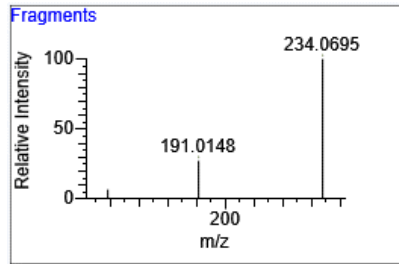
Diuron 敌草隆



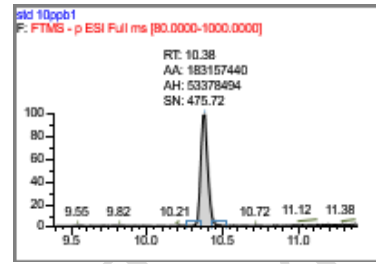
Diuron 敌草隆



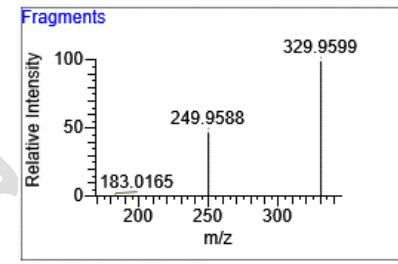
Ethopabate 乙氧酰胺苯甲酯



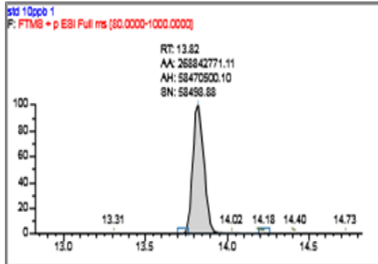
Ethopabate 乙氧酰胺苯甲酯



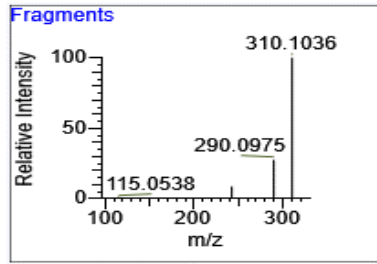
Fipronil 氟虫晴



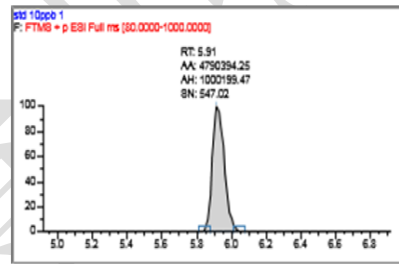
Fipronil 氟虫晴



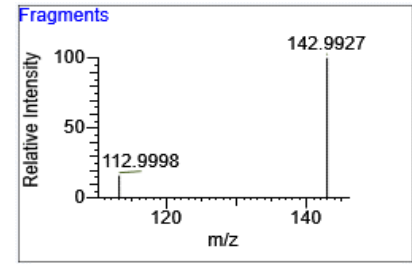
Fluridone 氟啶草酮



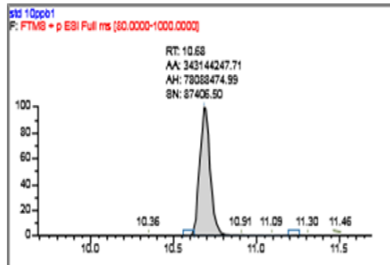
Fluridone 氟啶草酮



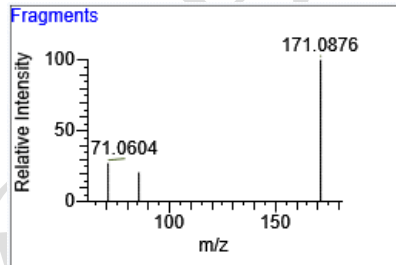
Acephate 乙酰甲胺磷



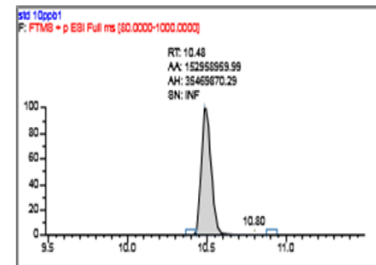
Acephate 乙酰甲胺磷



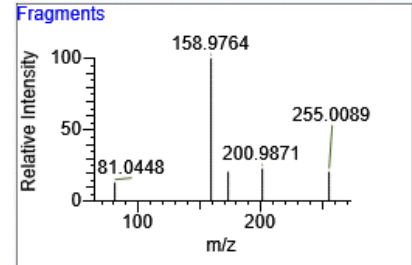
Hexazinone 环嗪酮



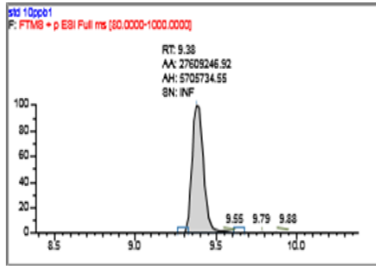
Hexazinone 环嗪酮



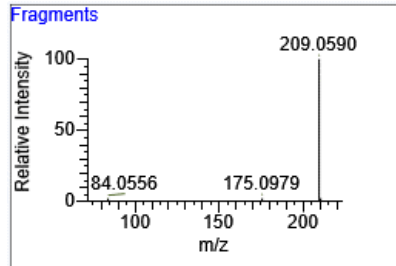
Imazalil 抑霉唑



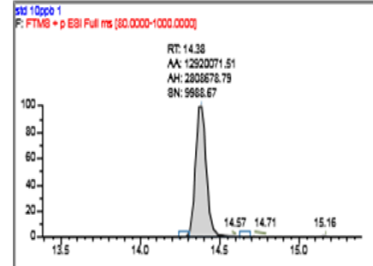
Imazalil 抑霉唑



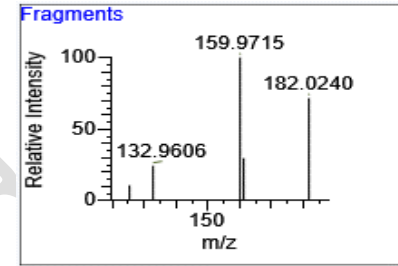
Imidacloprid 吡虫啉



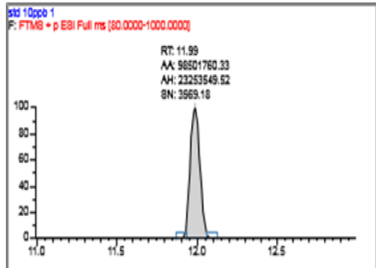
Imidacloprid 吡虫啉



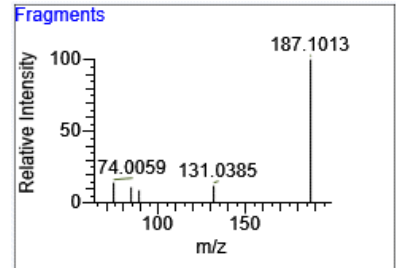
Linuron 利谷隆



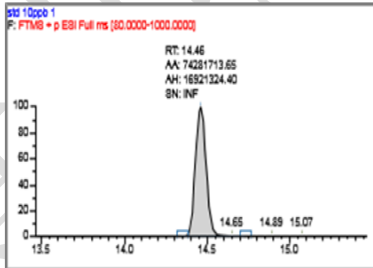
Linuron 利谷隆



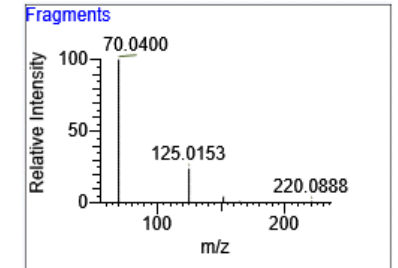
Metribuzin 嗪草酮



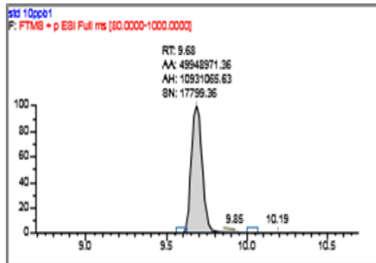
Metribuzin 嗪草酮



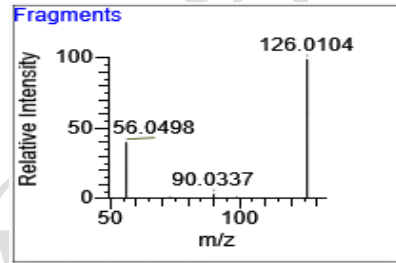
Myclobutanil 腈菌唑



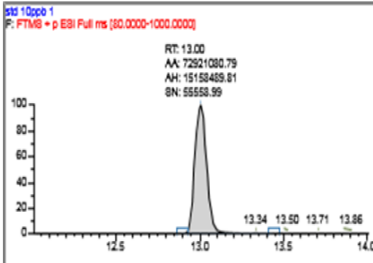
Myclobutanil 腈菌唑



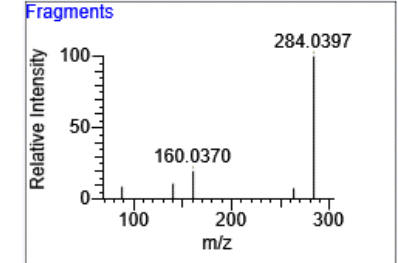
Acetamiprid 啉虫脒



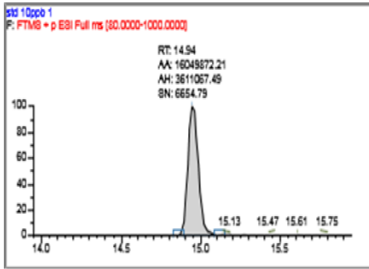
Acetamiprid 啉虫脒



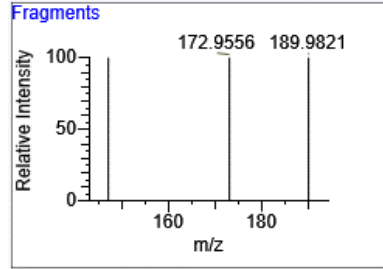
Norflurazon 氟草敏



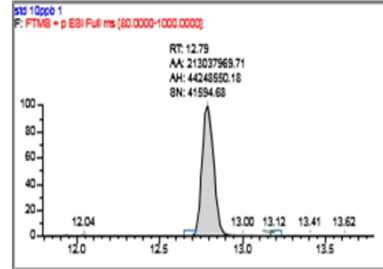
Norflurazon 氟草敏



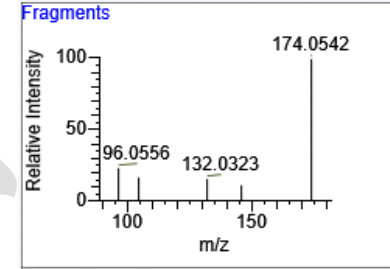
Propyzamide 炔苯酰草胺



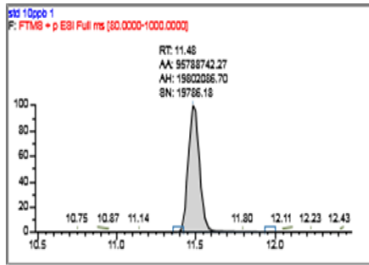
Propyzamide 炔苯酰草胺



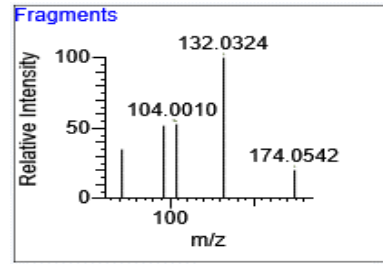
Atrazine 莠去津



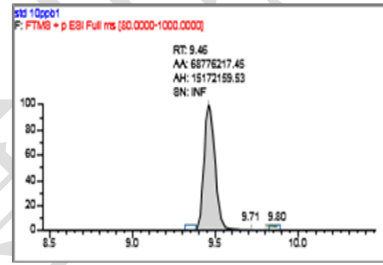
Atrazine 莠去津



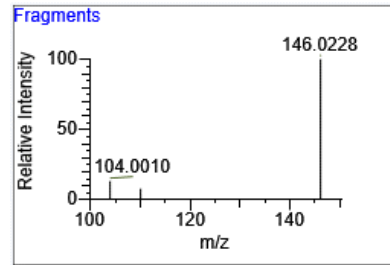
Simazine 西玛津



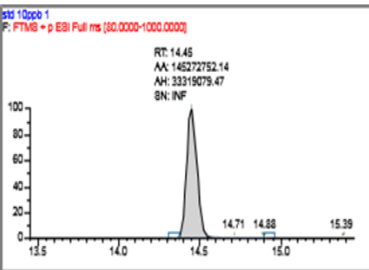
Simazine 西玛津



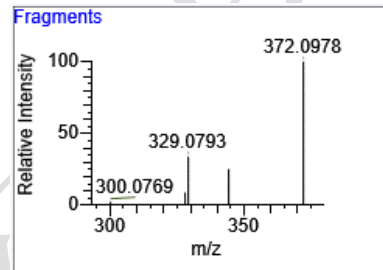
Atrazine-desethyl 去乙基莠去津



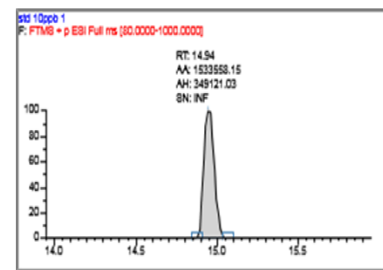
Atrazine-desethyl 去乙基莠去津



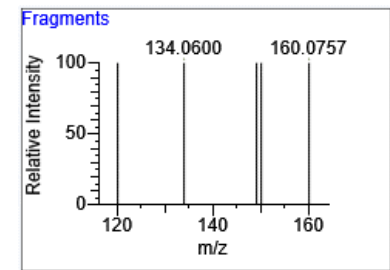
Azoxystrobin 啞菌酯



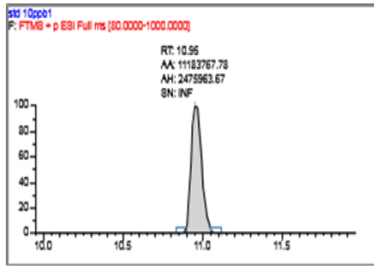
Azoxystrobin 啞菌酯



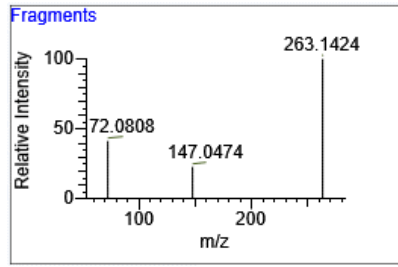
Benoxacor 解草嗪



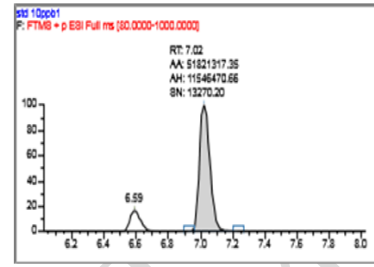
Benoxacor 解草嗪



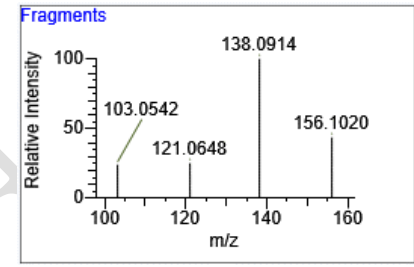
Valnemulin 沃尼妙林



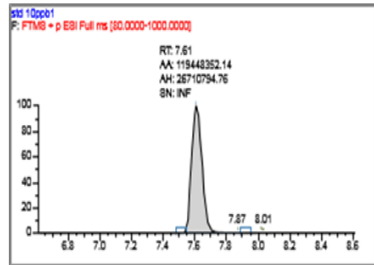
Valnemulin 沃尼妙林



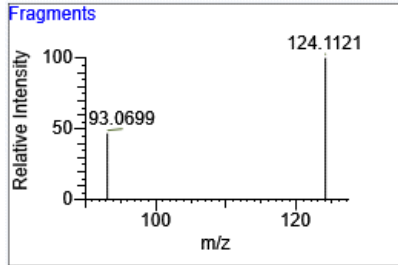
Scopolamine 东莨菪碱



Scopolamine 东莨菪碱



Atropine 阿托品



Atropine 阿托品

图A 127种药物（10 ng/mL）正负离子模式下一级离子提取色谱图和二级质谱图