

0009 - Bitter Orange for Synephrines by HPLC

Botanical Name: *Citrus aurantium*

Common Names: Seville orange, sour orange, bigarade orange, marmalade orange

Plant Description:

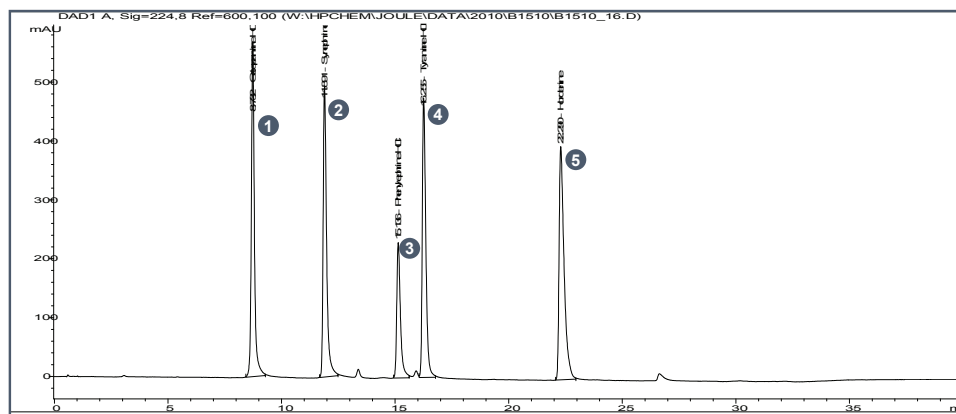
Citrus aurantium is a plant (or tree) that is native to tropical Asia and widely cultivated throughout the Mediterranean region. They are classified as evergreen citrus trees and can grow up to 10m. The tree is frost tender, leafs in January and produces white flowers from April to June. The plant prefers medium or heavy soils and requires well drained soil. The plant cannot grow in shade and requires moist soil to flourish.

Therapeutic Use Overview:

Many varieties of bitter orange are used for their essential oil which contains a wide variety of biologically active compounds. The extracts have been used in dietary supplements as an aid to fat loss as well as an appetite suppressant. The compounds belong to the synephrine class of chemicals and act on adrenergic receptors to constrict blood vessels, increase blood pressure and heart rate. Practitioners of Traditional Chinese medicine always prescribe the extracts in concert with other support herbs to eliminate and combat any negative symptoms a sensitive individual may experience.



Representative HPLC Analysis: Mixed Standard Solution



Analytes:

- ① Octopamine HCl, ② Synephrine, ③ Phenylephrine HCl, ④ Tyramine HCl, ⑤ Hordenine

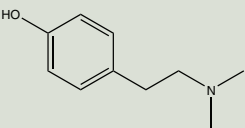
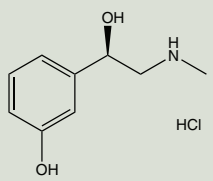
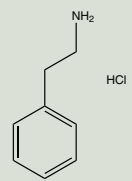
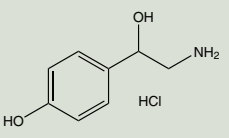
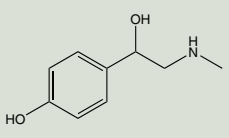
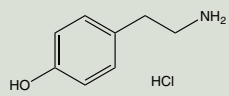
Instrument Parameters

Column: Phenomenex Luna C18(2); 150 x 3.0 mm, 5 μm
Detection: UV-Vis @224
Flow Rate: 0.85 mL/min
Injection Volume: 20 μL
Temperature: 35°C
Mobile Phase A: 10mM HSA in Borate Buffer
Mobile Phase B: 20:80 // ACN:10mM HSA in Borate Buffer

Gradient Program

Time (min)	%A	%B
0	100	0
30	0	100
32	100	0
40	100	0

Phytochemical Reference Standards

Product Description And Details	Product ID	Qty
 <p>HORDENINE(FREE BASE) Grade: P CAS#: [539-15-1] Chemical Formula: $C_{10}H_{15}NO$ FW: 165.24</p>	<p>ASB-00008334-010 ASB-00008334-025 ASB-00008334-050 ASB-00008334-100</p>	<p>10mg 25mg 50mg 100mg</p>
 <p>PHENYLEPHRINE HCL(METASYNEPHRINE) Grade: P CAS#: [61-76-7] Chemical Formula: $C_9H_{13}NO_2 \cdot H$ FW: 203.67</p>	<p>ASB-00016439-050 ASB-00016439-100</p>	<p>50mg 100mg</p>
 <p>PHENYLETHYLAMINE HCL(PEA) Grade: P CAS#: [156-28-5] Chemical Formula: $C_8H_{11}N \cdot HCl$ FW: 203.67</p>	<p>ASB-00016439-050 ASB-00016439-100</p>	<p>50mg 100mg</p>
 <p>OCTOPAMINE HCL Grade: P CAS#: [770-05-8] Chemical Formula: $C_8H_{11}NO_2 \cdot HCl$ FW: 189.64</p>	<p>ASB-00015046-050 ASB-00015046-100</p>	<p>50mg 100mg</p>
 <p>SYNEPHRINE Grade: P CAS#: [94-07-5] Chemical Formula: $C_9H_{13}NO_2$ FW: 167.21</p>	<p>ASB-00020601-050 ASB-00020601-100</p>	<p>50mg 100mg</p>
 <p>TYRAMINE HCL Grade: P CAS#: [60-19-5] Chemical Formula: $C_8H_{11}NO \cdot HCl$ FW: 173.64</p>	<p>ASB-00020601-050 ASB-00020601-100</p>	<p>50mg 100mg</p>

Reference Standard Kits

Product Name	Contents	Product ID	Qty
BITTER ORANGE(SYNEPHRINE) STANDARDS KIT	HORDENINE(FREE	KIT-00002300-050	5 x 50mg vials
	BASE)(P),OCTOPAMINE HCL(P),PHENYLEPHRINE HCL(METASYNEPHRINE) (P),PHENYLETHYLAMINE HCL(PEA) (P),SYNEPHRINE(P),TYRAMINE HCL(P)	KIT-00002300-100	5 x 100mg vials

Botanical Reference Materials

Product Description	Grade	Product ID	Qty
BITTER ORANGE (CITRUS AURANTIUM) FRUIT	BRM	ASB-00030102-005	5g

Additional Related Compounds

Product Description And Details	Product ID	Qty
HORDENINE SULFATE Grade: P CAS#: [622-64-0] Chemical Formula: $C_{20}H_{30}N_2O_2 \cdot H_2SO_4$ FW: 428.54	ASB-00008331-010	10mg
	ASB-00008331-025	025mg
	ASB-00008331-050	050mg
METHYLTYRAMINE, N- Grade: SH CAS#: [370-98-9] Chemical Formula: $C_9H_{13}NO$ FW: 151.21	ASB-00013661-005	5mg
	ASB-00013661-010	10mg
NEOHESPERIDIN Grade: SH CAS#: [13241-33-3] Chemical Formula: $C_{28}H_{34}O_1$ FW: 610.56	ASB-00014250-005	5mg
	ASB-00014250-010	10mg
NOBILETIN Grade: P CAS#: [478-01-3] Chemical Formula: $C_{21}H_{22}O_8$ FW: 402.39	ASB-00014490-005	5mg
	ASB-00014490-010	10mg
	ASB-00014490-025	25mg

Product Description And Details	Product ID	Qty
SINENSETIN	ASB-00019265-005	5mg
Grade: P	ASB-00019265-010	10mg
CAS#: [2306-27-6]	ASB-00019265-025	25mg
Chemical Formula: $C_{20}H_{20}O_7$		
FW: 372.37		
TANGERETIN	ASB-00016111-005	5mg
Grade: P	ASB-00016111-010	10mg
CAS#: [481-53-8]	ASB-00016111-025	25mg
Chemical Formula: $C_{20}H_{20}O_7$		
FW: 306.7		