ChromaDex®

Application Note

0026 - Ginseng for Ginsenosides by HPLC

Botanical Name:

Panax ginseng, Panax notoginseng, Panax quinquefolius

Common Names:

Chinese Ginseng, San Qi, American Ginseng

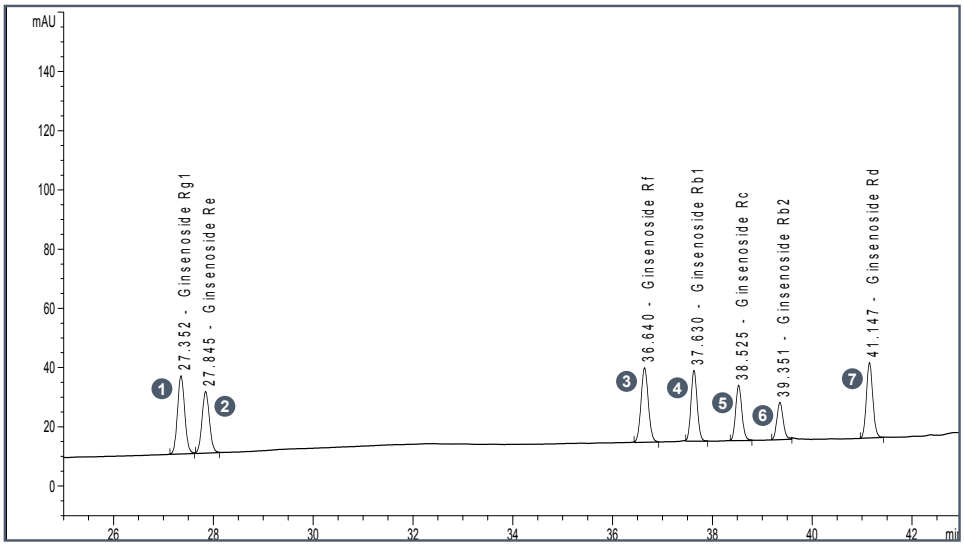
Plant Description:

Ginseng is any one of eleven distinct species of plants belonging to the Panax (except for Siberian Ginseng) genus. Typically growing in cooler climates, ginseng grows in the northern hemisphere (mostly Korea and northern China). The roots are often gnarled with stringy shoots projecting from the central mass. Plants take 5-7 years to mature and have leaves that grow in a circular pattern around a straight stem. Fruits are small edible drupes that grow in clusters. The roots are harvested 6 years after planting and contain the biologically active compounds.

Therapeutic Use Overview:

Ginseng has a long history of use in traditional medicines. Used by the Chinese for thousands of years, ginseng has been used as an adaptogen, an aphrodisiac and a treatment for type II diabetes. Ginseng active components belong to a class known as ginsenosides. These compounds have been attributed to the antioxidant properties that ginseng extract containing compounds possess. At least 30 of these compounds have been isolated and characterized from the various species of ginseng.

Representative HPLC Analysis: Mixed Standard Solution



Analytes:

1 Ginsenoside Rg1, 2 Ginsenoside Re, 3 Ginsenoside Rf, 4 Ginsenoside Rb1, 5 Ginsenoside Rc, 6 Ginsenoside Rb2, 7 Ginsenoside Rd

Instrument Parameters

Column:	Phenomenex Synergi Polar-RP 150 x 4.6 mm, 4u
Detection:	UV-Vis @ 203nm
Flow Rate:	0.800 mL/min
Injection Volume:	10 µL
Temperature:	35°C
Mobile Phase A:	Milli-Q-water
Mobile Phase B:	80:20 (v/v) ACN: Milli-Q water

Gradient Program

Time (min)	%A	%B
0	85	15
8	85	15
18	75	25
25	70	30
42	52	48
43	0	100
44	0	100
45	85	15
50	85	15

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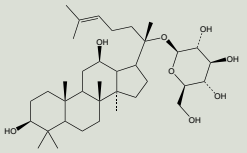
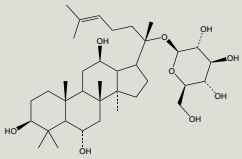
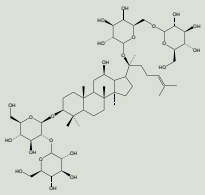
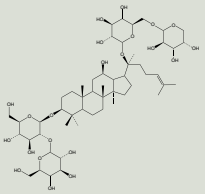
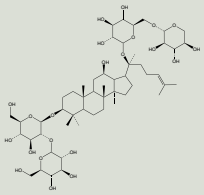
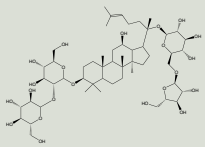
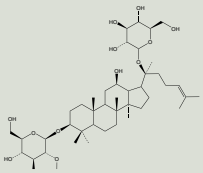
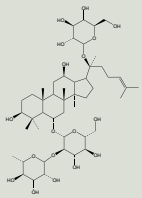
Phytochemical Reference Standards

Product Description And Details		Product ID	Qty
	GINSENOSIDE Compound K Grade: P CAS#: [39262-14-1] Chemical Formula: $C_{36}H_{62}O_8$ FW: 622.87	ASB-00007218-005 ASB-00007218-010	5mg 10mg
	GINSENOSIDE F1 Grade: P CAS#: [53963-43-2] Chemical Formula: $C_{36}H_{62}O_9$ FW: 638.88	ASB-00007219-005 ASB-00007219-010	5mg 10mg
	GINSENOSIDE Rb1 Grade: AHP CAS#: [41753-43-9] Chemical Formula: $C_{54}H_{92}O_{23}$ FW: 1109.31	ASB-00007190-005 ASB-00007190-010 ASB-00007190-025	5mg 10mg 25mg
	GINSENOSIDE Rb2 Grade: AHP CAS#: [11021-13-9] Chemical Formula: $C_{53}H_{90}O_{22}$ FW: 1079.29	ASB-00007195-005 ASB-00007195-010	5mg 10mg
	GINSENOSIDE Rb3 Grade: SH CAS#: [68406-26-8] Chemical Formula: $C_{53}H_{90}O_{22}$ FW: 1079.29	ASB-00007197-005 ASB-00007197-010	5mg 10mg
	GINSENOSIDE Rc Grade: AHP CAS#: [11021-14-0] Chemical Formula: $C_{53}H_{90}O_{22}$ FW: 1079.29	ASB-00007200-005 ASB-00007200-010	5mg 10mg
	GINSENOSIDE Rd Grade: AHP CAS#: [52705-93-8] Chemical Formula: $C_{48}H_{82}O_{18}$ FW: 947.14	ASB-00007205-005 ASB-00007205-010	5mg 10mg
	GINSENOSIDE Re Grade: AHP CAS#: [52286-59-6] Chemical Formula: $C_{48}H_{82}O_{18}$ FW: 947.14	ASB-00007210-005 ASB-00007210-010	5mg 10mg

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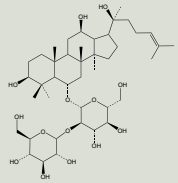
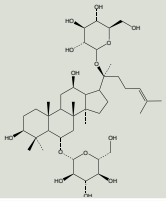
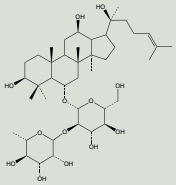
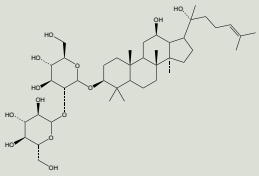
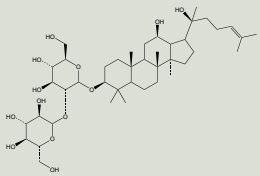
	GINSENOSIDE Rf Grade: P CAS#: [52286-58-5] Chemical Formula: $C_{42}H_{72}O_{14}$ FW: 801.02	ASB-00007215-005 ASB-00007215-010	5mg 10mg
	GINSENOSIDE Rg1 Grade: AHP CAS#: [522427-39-0] Chemical Formula: $C_{42}H_{72}O_{14}$ FW: 801.02	ASB-00007220-005 ASB-00007220-010 ASB-00007220-050	5mg 10mg 50mg
	GINSENOSIDE Rg2 Grade: P CAS#: [52286-74-5] Chemical Formula: $C_{42}H_{72}O_{13}$ FW: 785.01	ASB-00007202-005 ASB-00007202-010	5mg 10mg
	GINSENOSIDE Rg3 R form Grade: P CAS#: [38243-03-7] Chemical Formula: $C_{42}H_{72}O_{13}$ FW: 785.01	ASB-00007224-005 ASB-00007224-010	5mg 10mg
	GINSENOSIDE Rg3 S form Grade: P CAS#: [14197-60-5] Chemical Formula: $C_{42}H_{72}O_{13}$ FW: 785.01	ASB-00007217-005 ASB-00007217-010	5mg 10mg

Reference Standard Kits

Product Name	Contents	Product ID	Qty
GINSENOSIDES HPLC(P) ANALYSIS KIT	GINSENOSIDE Rb1(AHP) GINSENOSIDE Rb2(AHP) GINSENOSIDE Rc(AHP) GINSENOSIDE Rd(AHP) GINSENOSIDE Re(AHP) GINSENOSIDE Rf(P) GINSENOSIDE Rg1(AHP)	KIT-00007225-005 KIT-00007225-010 KIT-00007225-0HK	7 x 5mg vials 7 x 10mg vials 7 x 5mg + C vials

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GINSENOSIDES STANDARDS KIT(SH) 7 STDS	GINSENOSIDE Rb1(SH) GINSENOSIDE Rb2(SH) GINSENOSIDE Rc(SH) GINSENOSIDE Rd(SH) GINSENOSIDE Re(SH) GINSENOSIDE Rf(P) GINSENOSIDE Rg1(SH)	KIT-00007226-005 KIT-00007226-010	7 x 5mg vials 7 x 10mg vials
GINSENOSIDES STANDARDS KIT(SH) 6 STDS	GINSENOSIDE Rb1(SH) GINSENOSIDE Rb2(SH) GINSENOSIDE Rc(SH) GINSENOSIDE Rd(SH) GINSENOSIDE Re(SH) GINSENOSIDE Rg1(SH)	KIT-00007227-005 KIT-00007227-010 KIT-00007227-025 KIT-00007227-0HK	6 x 5mg vials 6 x 10mg vials 6 x 25mg vials 6 x 5mg + C vials

Additional Related Compounds

Product Description And Details	Prodcut ID	Qty
GINSENOSIDE Rg2 Grade: SH CAS#: [52286-74-5] Chemical Formula: $C_{42}H_{72}O_{13}$ FW: 785.01	ASB-00007222-005	5mg
GINSENOSIDE Rg3 Grade: SH CAS#: [14197-60-5] Chemical Formula: $C_{42}H_{72}O_{13}$ FW: 785.01	ASB-00007223-005	5mg
GINSENOSIDE Rh1 Grade: SH CAS#: [63223-86-9] Chemical Formula: $C_{36}H_{62}O_{9}$ FW: 638.87	ASB-00007228-005	5mg
GINSENOSIDE Rh2 Grade: SH CAS#: [78214-33-2] Chemical Formula: $C_{36}H_{62}O_{8}$ FW: 622.87	ASB-00007229-005	5mg

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Product Description And Details	Prodcut ID	Qty
NOTOGINSENOSIDE R1 Grade: SH CAS#: [80418-24-2] Chemical Formula: $C_{47}H_{80}O_{18}$ FW: 933.14	ASB-00014600-005 ASB-00014600-010	5mg 10mg
PSEUDOGINSENOSIDE F11 Grade: SH CAS#: [69884-00-0] Chemical Formula: $C_{42}H_{72}O_{14}$ FW: 801.01	ASB-00016345-005 ASB-00016345-010	5mg 10mg

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