Technical documentation

Product name:	**qRE Eleutherococcus senticosus (Rupr. & Maxim.) Maxim., roots**
Substance:	Eleutherococcus senticosus (Rupr. & Maxim.) Maxim., roots dry extract
Plant source common names:	en: Siberian ginseng; fr: Eleuthérocoque
Reference:	E0121
Packaging:	100 mg in a 1.5 ml borosilicate amber vial
Storage conditions:	Keep container closed. Protect from light and moisture. Keep inferior to -15 °C.
Retest:	12 months

Method of production of dry extract

Whole plant or plant parts are collected, dried and coarsely ground.
Extraction is performed by decoction in 50 % (v/v) aqueous ethanol (v/v) for 30 minutes. Ethanol is then evaporated under reduced pressure at less than 40 °C and the aqueous residue is freeze-dried.
Residual water content measurement is done by Karl Fischer titration.

Organoleptic characteristics of dry extract

Colour: Orange brown
Odour: Non characteristic
Form: Fine powder

Recommended methods for use

Weight a precise weight of qRE and solubilise in the recommended solvent at the concentration indicated in the HPLC or HPTLC method described in this document.
Sonicate for 90 seconds (70 W).
Filter on a 0.45 µm PVDF membrane and put the resulting solution into HPLC dispenser or apply on the HPTLC plate.
Dose and analyse your extract with qRExtract using the HPLC / HPTLC methods described in this document or using your own methods.

HPTLC

Detection of eleutheroside E

Layer: 10 × 10 cm HPTLC Nano-Sil-20 UV 254 (Carl Roth ref. N084.1)

Thin layer conditionnement: 1 h at room temperature and 33 % relative humidity

Elution solvent:

Elution solvent compound	Volume (ml)
chloroform	70
methanol	30
H_2O	4

Developing distance: 70 mm from the lower edge

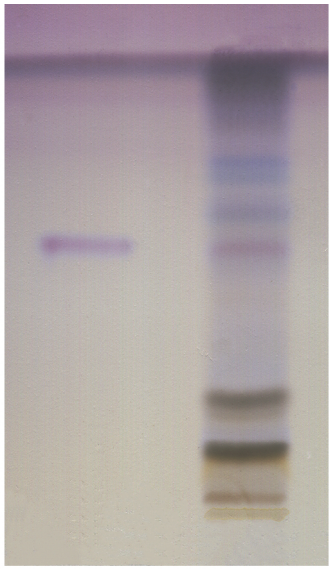
Initial spot volume and concentration:

eleutheroside E: 5 µl of a 0.02 % (w/v) solution in methanol

qRE: 6 µl of a 0.5 % (w/v) solution in 50 % (v/v) aqueous ethanol

Reagent mixture: Anisaldehyde reagent

Preparation: Slowly mix 85 mL of ice-cooled methanol with 10 mL of glacial acetic acid and 5 mL of sulfuric acid. Allow the mixture to cool to room temperature, then add 0.5 mL of anisaldehyde (p-methoxy benzaldehyde) Dip the plate in the reagent mixture and dry for 10 minutes at 110 °C. Expose to visible light.



eleutheroside E qRE

HPTLC

Detection of chlorogenic acid

Layer: 10 × 10 cm HPTLC Nano-Sil-20 UV 254 (Carl Roth ref. N084.1)

Thin layer conditionnement: 1 h at room temperature and 33 % relative humidity

Elution solvent:

Elution solvent compound	Volume (ml)
ethyl acetate	100
water	26
formic acid	11
acetic acid	11

Developing distance: 70 mm from the lower edge

Initial spot volume and concentration:

qRE: 5 µl of a 0.5 % (w/v) solution in 50 % (v/v) aqueous ethanol

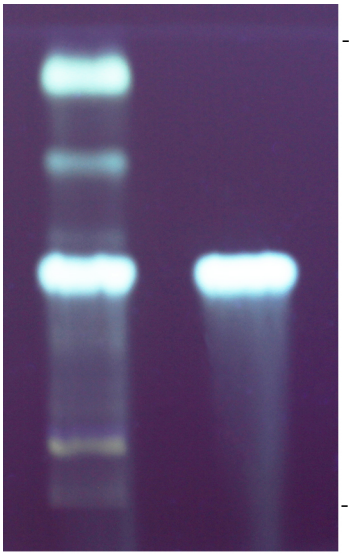
chlorogenic acid: 1 µl of a 0.02 % (w/v) solution in 50 % (v/v) aqueous ethanol

Reagent mixture: Natural products - polyethylene glycol reagent (NP/PEG)

Preparation: Dissolve 0.25 g of diphenylboric acid 2-aminoethylester and 1.25 g of polyethylene glycol 400 in 25 mL of methanol.

Dip the plate in the reagent mixture and dry for 15 minutes at room temperature.

Expose to UV light at 365 nm.

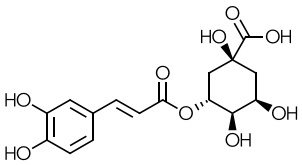
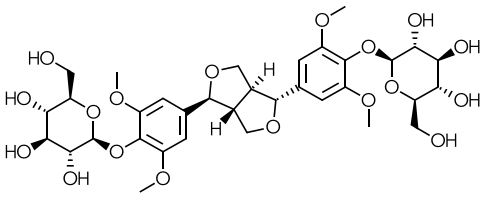
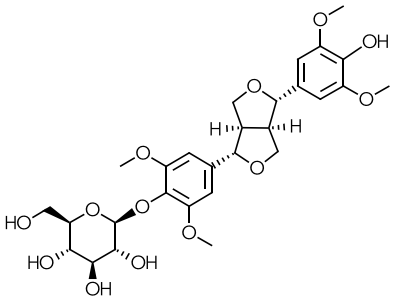
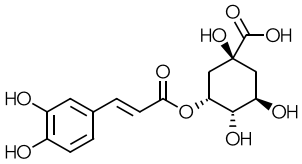


HPLC

Precolumn: Ascentis® Express C18 0.5 cm × 3.0 mm 2.7 µm
Column: Ascentis® Express C18 15 cm × 3.0 mm 2.7 µm
Sample: 8 µl 0.34 % qRE® (w/v) solution in 50 % (v/v) aqueous ethanol
Flow: 0.45 ml/min
Temperature: 25 °C
Mobile phase: A: 0.1 % formic acid (v/v) in water
B: 0.1 % formic acid (v/v) in acetonitrile
Detection: Diode Array Detector, 210 nm
Gradient:

Time (mn)	A %	B %
0	97	3
45	76.3	23.7

Quantified substances

Compound	CAS No	2D Structure	Peak No
Chlorogenic acid	327-97-9		1
Eleutheroside E	39432-56-9		2
Eleutheroside E1	7374-79-0		4
Chlorogenic acid isomer	NA		5, 6, 7
Unknown	NA	NA	3