Technical documentation

Product name:	**qRE Rhodiola rosea L., roots**
Substance:	Rhodiola rosea L., roots dry extract
Plant source common names:	en: Roseroot; fr: Rhodiole
Reference:	E0059
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

Botanical identification of plant source

Plants in our botanical garden are identified and a herbal voucher is prepared by an expert botanist.
Each batch collected for extraction is verified and identified.
Reference: Flora Europaea, Cambridge, University Press, 1993, Vol 1, p 363

Method of production of dry extract

Whole plant or plant parts are collected, freeze-dried and coarsely ground. Extraction is performed by maceration in 50 % (v/v) aqueous ethanol for 48 hours at room temperature. Ethanol is then evaporated under reduced pressure at less than 40 °C and the aqueous residue is freeze-dried.

Organoleptic characteristics of dry extract

Colour: Light brick red
Odour: 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 rosavin

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	77
methanol	15
H_2O	8

Developing distance: 70 mm from the lower edge

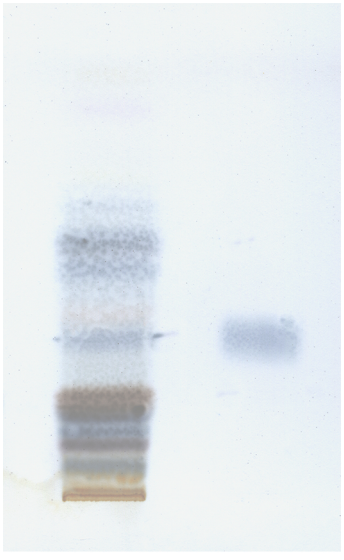
Initial spot volume and concentration:

qRE: 5 µl of a 2.6% (w/v) solution in 50 % aqueous ethanol

rosavin: 2 µl of a 0.1% (w/v) solution in 50 % aqueous methanol

Reagent mixture: Aniline - diphenylamine-phosphoric acid reagent

Preparation: Dissolve 1 g of diphenylamine in 40 mL of acetone, add 1 mL of aniline, and mix. Carefully add 7.5 mL of phosphoric acid, and mix.
Dip in the reagent mixture and dry for 5 minutes at 120 °C.
Expose to visible light.



HPTLC

Detection of salidroside

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	77
methanol	15
H_2O	8

Developing distance: 70 mm from the lower edge

Initial spot volume and concentration:

qRE: 1,5 µl of a 2.6 % (w/v) solution in 50 % (v/v) aqueous ethanol

salidroside: 1 µl of a 0.1 % (w/v) solution in 50 % (v/v) aqueous methanol

Reagent mixture: Iron(III) chloride - Potassium ferricyanide

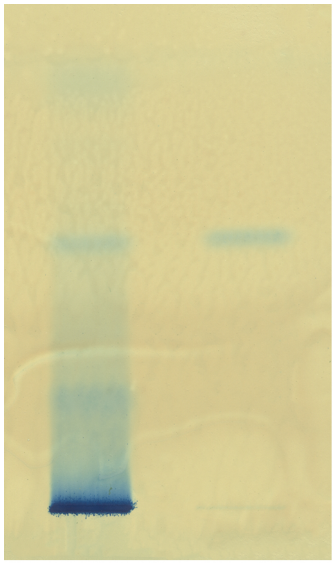
Preparation:

1) dissolve 4.5 g of ferric chloride in 100 mL of 50 % (v/v) aqueous ethanol.

2) dissolve 1g of potassium ferricyanide in 100 mL of 50 % (v/v) aqueous ethanol.

Dip in a combination (1:1) of two reagent mixtures and dry for 10 minutes at room temperature.

Expose to visible light.

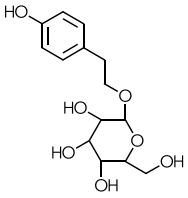
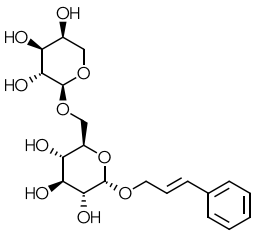
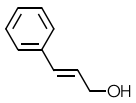
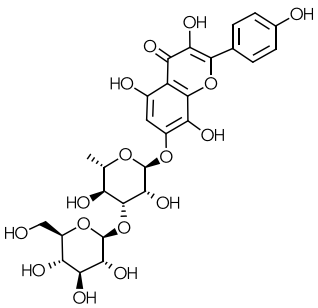


HPLC

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: 10 µl 1.5 % qRE (w/v) solution in 25 % (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, 256 nm
Gradient:

Time (mn)	A %	B %
0	97	3
65	79	21
90	60	40

Quantified substances

Compound	CAS No	2D Structure	Peak No
Salidroside	10338-51-9		1
Rosavin	84954-92-7		4
Cinnamyl alcohol	104-54-1		5
Rhodiosin	86831-54-1		6
Unknown	NA	NA	2, 3, 7, 8