

Technical documentation

Product name:	qRE Gentiana lutea L., roots
Substance:	Gentiana lutea L., roots dry extract
Plant source common names:	en: Yellow gentian; fr: Gentiane
Reference:	E0024
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, 1972, Vol 3, p 60

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: Yellow

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 gentiopicroside

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	90
methanol	20
H ₂ O	1.5

Developing distance: 70 mm from the lower edge

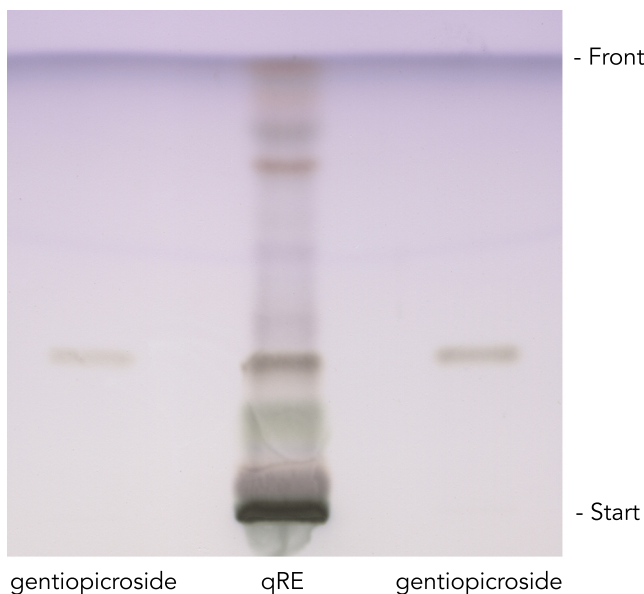
Initial spot volume and concentration:

gentiopicroside 1:	3 µl of a 0.04 % (w/v) solution in ethanol 96%
qRE:	10 µl of a 2 % (w/v) solution in 50 % (v/v) aqueous ethanol
gentiopicroside 2:	5 µl of a 0.04 % (w/v) solution in ethanol 96%

Reagent mixture:

Anisaldehyde reagent

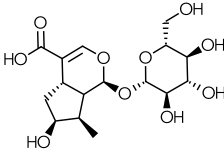
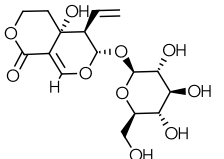
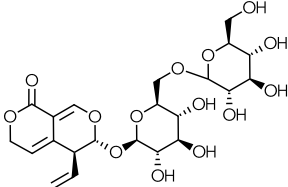
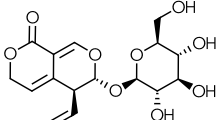
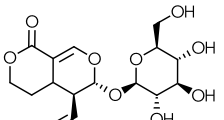
Preparation: Slowly mix 85 mL of ice-cooled methanol with 10 mL of glacial acetic acid and 5 mL of sulfuric acid. Allow the mixture to cool to room temperature, then add 0.5 mL of anisaldehyde (p-methoxy benzaldehyde). Dip the plate in the reagent mixture and dry for 10 minutes at 110 °C. Expose to visible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

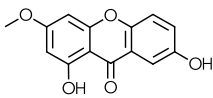


HPLC

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 3.37 % 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, 204 nm		
Gradient:	Time (mn)	A %	B %
	0	97	3
	60	76	24
	72	63	37
	80	0	100
	90	0	100

Quantified substances

Compound	CAS No	2D Structure	Peak No
Loganic acid	22255-40-9		1
Swertiamarin	17388-39-5		2
6'-O-β-D-glucopyranosyl gentiopicroside	NA		3
Gentiopicroside	20831-76-9		4
Sweroside	14215-86-2		5

Compound	CAS No	2D Structure	Peak No
Unknown	NA	NA	6, 7, 8, 9
Gentisin	437-50-3		10