Technical documentation

Product name:	**qRE Valeriana officinalis L., roots**
Substance:	Valeriana officinalis L., roots dry extract
Plant source common names:	en: Valerian ; fr: Valériane
Reference:	E0007
Packaging:	100 mg in a 1.5 ml borosilicate amber vial
Storage conditions:	Keep container closed. Protect from light and moisture. Keep at -18 °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, 1976, Vol 4, p 53

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: Brown green
Odour: Very 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 valerenic acid, acetoxyvalerenic acid and hydroxyvalerenic 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)
cyclohexane	60
ethyl acetate	38
acetic acid	2

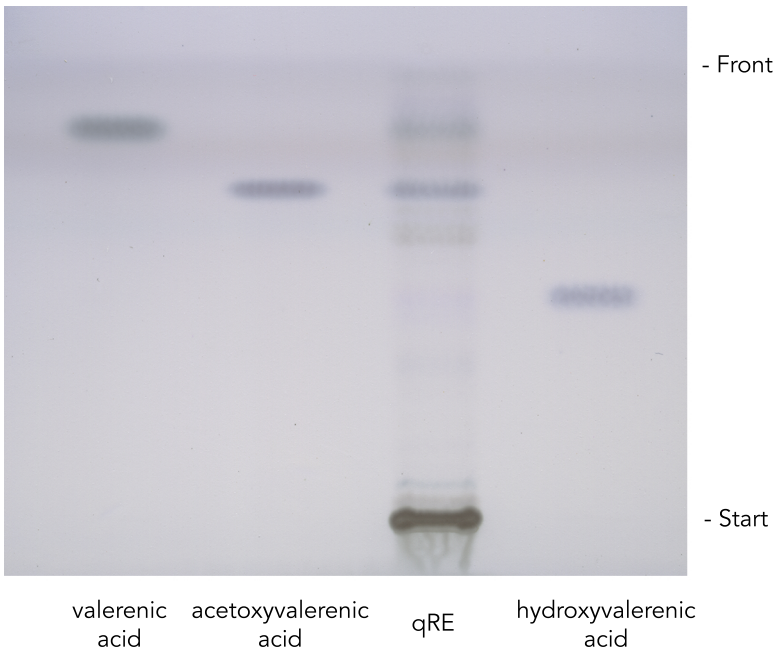
Developing distance: 70 mm from the lower edge

Initial spot volume and concentration:

valerenic acid:	2 µl of a 0.07 % (w/v) solution in methanol
acetoxyvalerenic acid:	2 µl of a 0.05 % (w/v) solution in methanol
qRE:	12 µl of a 1.45 % (w/v) solution in 50 % (v/v) aqueous ethanol
hydroxyvalerenic acid:	1.5 µl of a 0.06 % (w/v) solution in methanol

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.

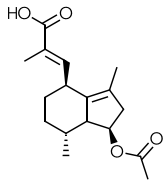
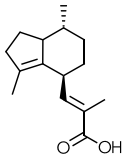
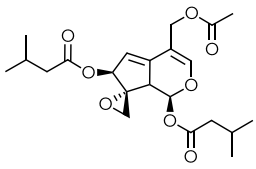


HPLC

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 1.85 % qRE (w/v) solution in 50 % (v/v) aqueous ethanol
Flow: 0.45 ml/min
Column temperature: 25 °C
Sample temperature: 5 °C
Mobile phase: A: water/acetonitrile (80:20) (v/v)
B: acetonitrile/water (80:20) (v/v)
Detection: Diode Array Detector, 256 nm
Gradient:

Time (mn)	A %	B %
0	97	3
20	80	20
55	0	100

Quantified substances

Compound	CAS No	2D Structure	Peak No
Acetoxyvalerenic acid	81397-67-3		2
Valerenic acid	3569-10-6		4
Unknown	NA	NA	1, 3, 5, 6
Valtrate	18296-44-1		7