

Technical documentation

Product name:	qRE Ginkgo biloba L., leaves
Substance:	Ginkgo biloba L., leaves dry extract
Plant source common names:	en: Ginkgo ; fr: Ginkgo
Reference:	E0013
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 of North America http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=200005235

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 yellow-beige

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 rutin, quercitrin and isoquercitrin

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	67.5
H ₂ O	17.5
acetic acid	7.5
formic acid	7.5

Developing distance: 70 mm from the lower edge

Initial spot volume and concentration:

rutin:	1 µl of a 0.02 % (w/v) solution in methanol
qRE:	10 µl of a 2 % (w/v) solution in 50 % (v/v) aqueous ethanol
quercitrin:	0.5 µl of a 0.02 % (w/v) solution in ethanol 96 %
isoquercitrin:	0.5 µl of a 0.08 % (w/v) solution in 50 % (v/v) aqueous ethanol

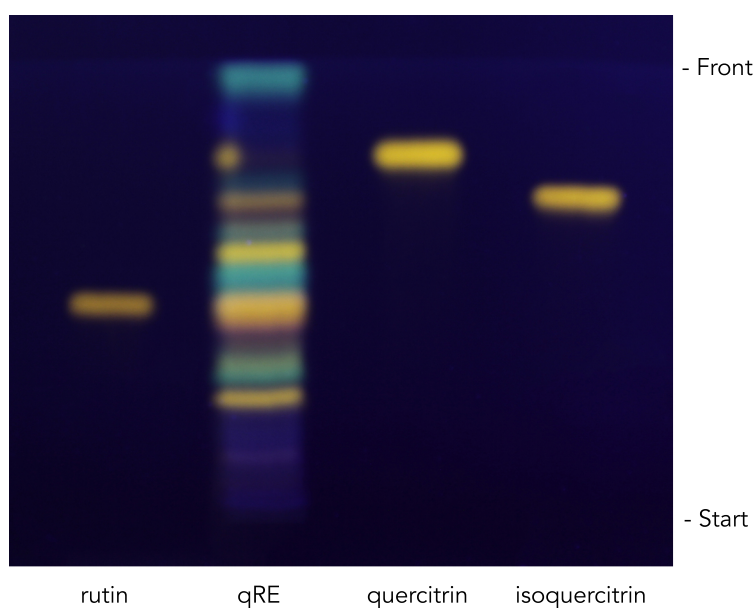
Reagent mixture:

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.

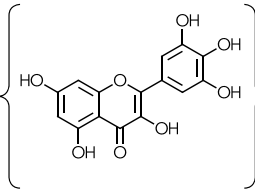
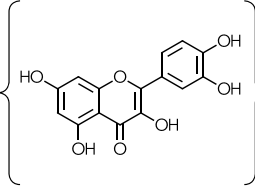
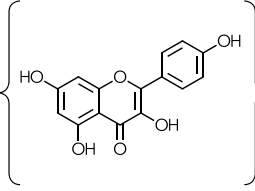
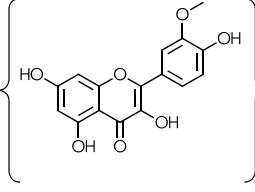


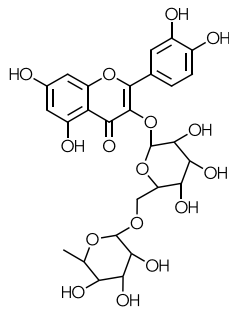
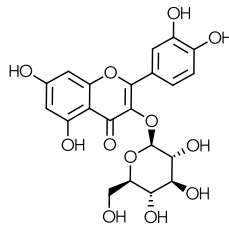
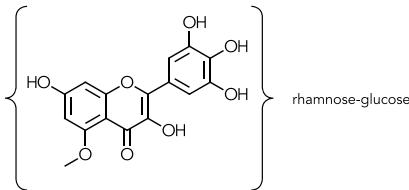
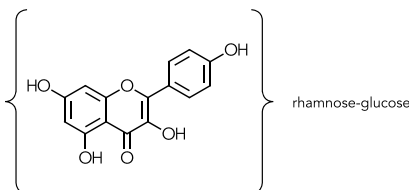
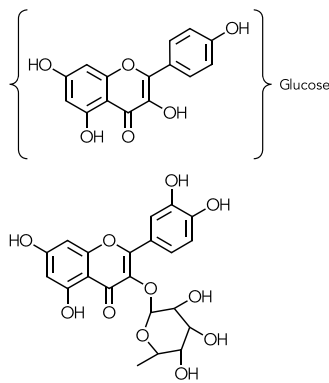
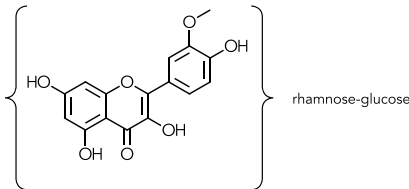
HPLC

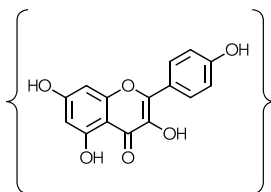
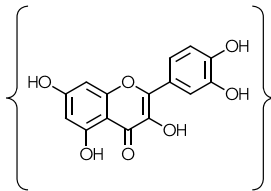
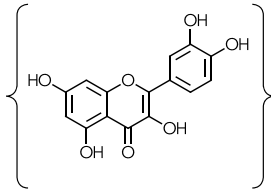
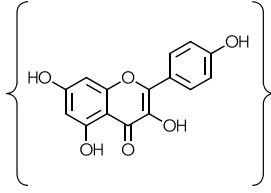
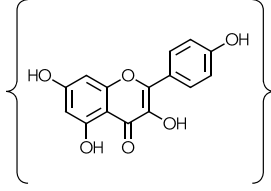
Precolumn: Ascentis® Express C18 0.5 cm × 3.0 mm 2.7 μm
Column: Ascentis® Express C18 15 cm × 3.0 mm 2.7 μm
Sample: 8 μl 2 % qRE (w/v) solution in 25 % (v/v) aqueous ethanol
Flow: 0.40 ml/min
Temperature: 35 °C
Mobile phase: A: 0.1 % formic acid (v/v) in water
 B: 0.1 % formic acid (v/v) in acetonitrile
Detection: Diode Array Detector, 330 nm
Gradient:

Time (mn)	A %	B %
0	95	5
30	82	18
35	72	28
42	72	28
52	0	100
62	0	100

Quantified substances

Compound	CAS No	2D Structure	Peak No
Rhamnosyl-glucosyl myricetin	NA	 Rhamnose-glucose	1
2-rhamnosyl glucosyl quercetin	NA	 2 X Rhamnose-glucose	2
2-rhamnosyl glucosyl kaempferol	NA	 2 X Rhamnose-glucose	3
Coumaroyl rhamnosyl glucosyl isorhamnetin	NA	 coumaric acid-rhamnose-glucose	4

Compound	CAS No	2D Structure	Peak No
Rutin	153-18-4		5
Quercetin-3-β-glucoside	482-35-9		6
Rhamnosyl glucosyl methymyricetin	NA	 rhamnose-glucose	7
Glucosyl-rhamnosyl kaempferol isomer	NA	 rhamnose-glucose	8
Glucosyl kaempferol AND quercetin-3-rhamnoside	NA	 Glucose	9
Glucosyl rhamnosyl isorhamnetin	NA	 rhamnose-glucose	10

Compound	CAS No	2D Structure	Peak No
Glucosyl-rhamnosyl kaempferol isomer	NA	 <p>rhamnose-glucose</p>	11
2-rhamnosyl glucosyl quercetin OR coumaroyl glucosyl rhamnosyl quercetin	NA	 <p>2 X Rhamnose-glucose</p>  <p>coumaric acid-rhamnose-glucose</p>	12
2-rhamnosyl glucosyl kaempferol OR coumaroyl glucosyl rhamnosyl kaempferol	NA	 <p>2 X Rhamnose-glucose</p>  <p>coumaric acid-rhamnose-glucose</p>	13