



Medicinal uses of Black currant Leaf

6th International Blackcurrant
Conference – 6-8th June 2018 –
Angers

Presentation of iteipmai

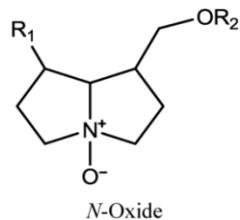
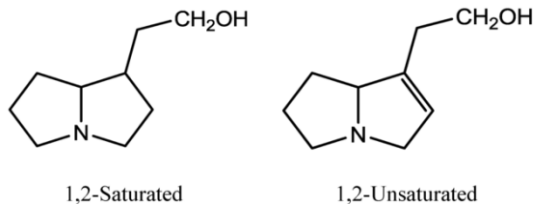
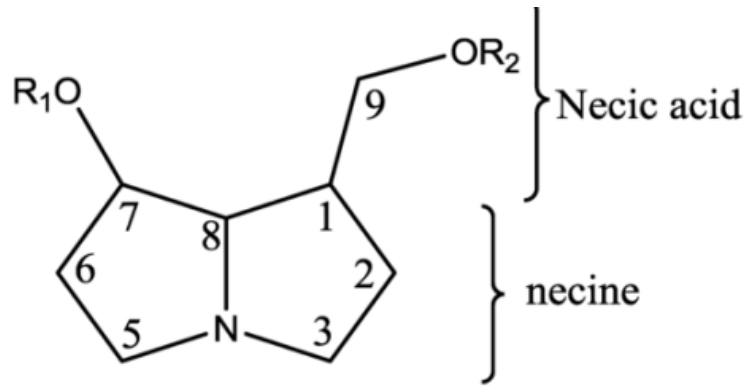
- A technical agricultural centre created by farmers and managed by farmers & industrials
- The French national institute of applied research, technical support and information
- A major role in the creation and diffusion of technical progress in MAP production

Presentation of iteipmai

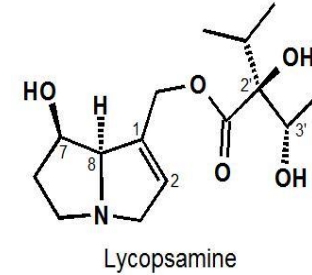
- Agronomical research
- Phytochemical analyses
- Processing information
- Normalisation : quality definition for French & European Pharmacopoeia



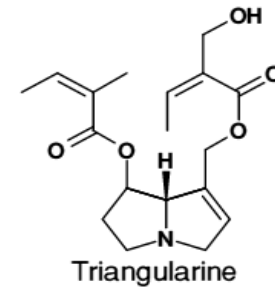
Pyrrolizidin alkaloids (PA)



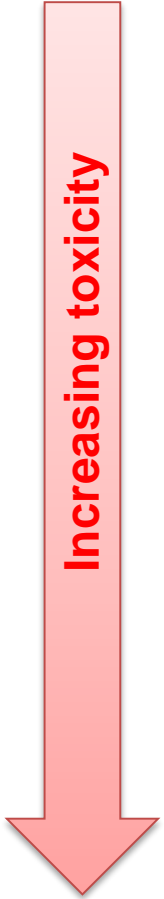
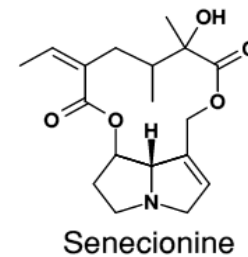
Monoesters
lycopsamine



Diesters ouverts
triangularine



Diesters cycliques
senecionine



Black currant Leaf

BG (bulgarski): Лист от черно френско грозде

CS (čeština): list rybízu černého

DA (dansk): Solbærblad

DE (Deutsch): Schwarze Johannisbeerblätter

EL (elliniká): φύλλο ριβησίου του μέλανος

EN (English): blackcurrant leaf

ES (español): grosellero negro, hoja de

ET (eesti keel): musta sõstra leht

FI (suomi): mustaherukka, lehti

FR (français): cassis (feuille de)

HR (hrvatski): list crnog ribizla

HU (magyar): feketeribizli levél

IT (italiano): Ribes nero foglia

LT (lietuvių kalba): Juodųjų serbentų lapai

LV (latviešu valoda): Upeņu lapas

MT (Malti): werqa tar-ribes

NL (Nederlands): Zwarte Aalbes

PL (polski): Liść porzeczki czarnej

PT (português): groselheira-negra, folha

RO (română): frunza de coacaz negru

SK (slovenčina): list ríbezle čiernej

SL (slovenščina): list črnega ribeza

SV (svenska): svartvinbär, blad

IS (íslenska):

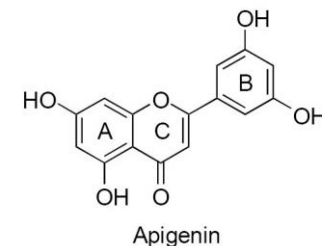
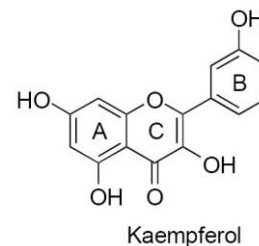
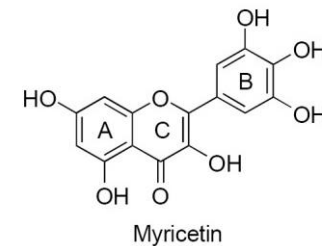
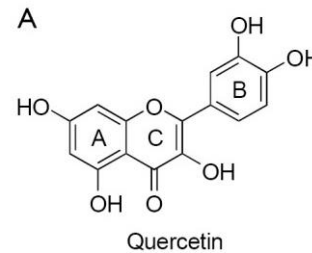
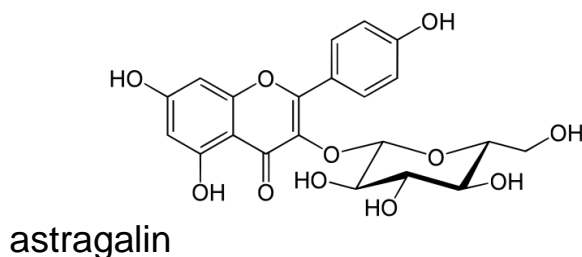
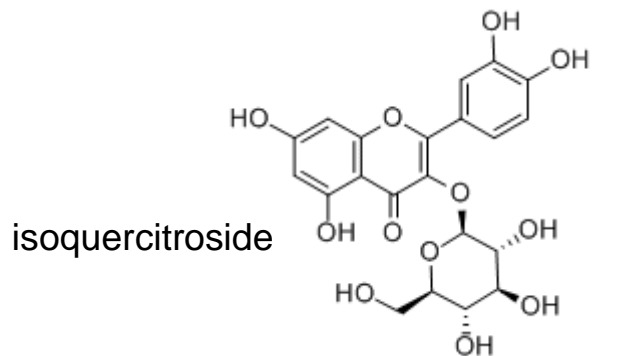
NO (norsk): solbærblad

monographs

- Quality monographs
 - Edqm
 - PPH
- Uses monographs
 - Ema
 - Escop
 - E Commission

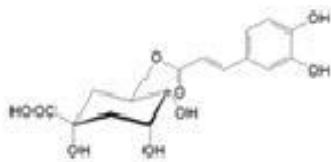
Constituents

- The most important secondary metabolites present in the herbal substance can be subdivided into several groups of phytochemical compounds.
- **Polyphenolic substances**, more particularly flavonoid glycosides: kaempferol, quercetin, myricetin, isorhamnetin and sakuranetin (Wyk & Wink, 2005).

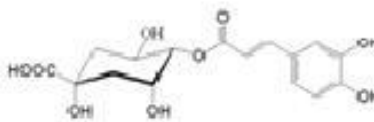


Constituents

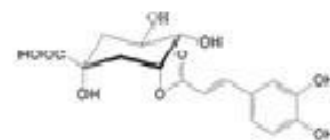
- The most important secondary metabolites present in the herbal substance can be subdivided into several groups of phytochemical compounds.
- **Hydroxycinnamic acid derivatives:** chlorogenic acid and chlorogenic acid derivatives (isochlorogenic acid, neochlorogenic acid), caffeic acid, gallic acid, ferulic acid, coumaric acid, gentisinic acid (Trajkovski, 1974a; Trajkovski 1974b).



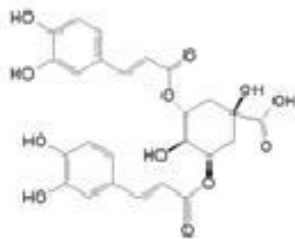
3-O-caffeoylquinic acid
(Chlorogenic acid)



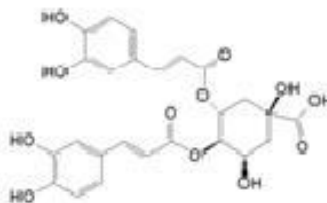
4-O-caffeoylquinic acid
(Kryptochlorogenic acid)



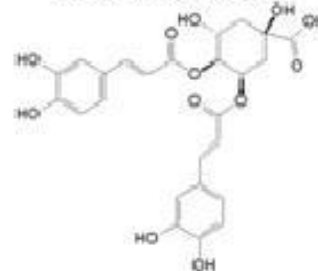
5-O-caffeoylquinic acid
(Neochlorogenic acid)



3, 5-dicaffeoylquinic acid
(Isochlorogenic acid A)



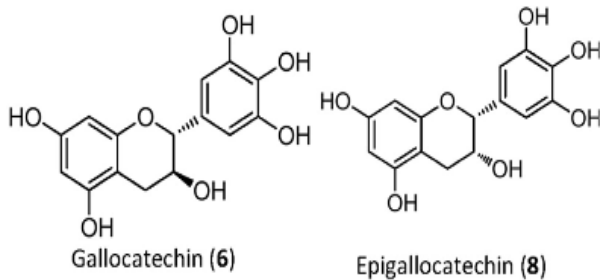
3, 4-dicaffeoylquinic acid
(Isochlorogenic acid B)



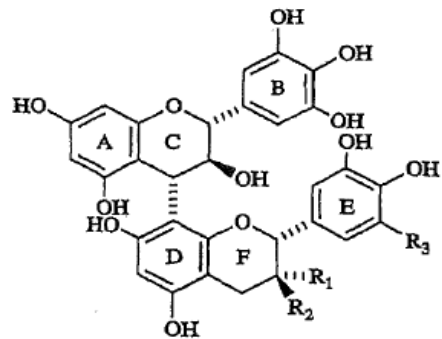
4, 5-dicaffeoylquinic acid
(Isochlorogenic acid C)

Constituents

- The most important secondary metabolites present in the herbal substance can be subdivided into several groups of phytochemical compounds.
- **Prodelphinidins (proanthocyanidines)** were identified in a methanolic extract of the leaves. They may be responsible for the anti-inflammatory properties of the herbal preparations (Tits *et al.*, 1992a, 1992b).

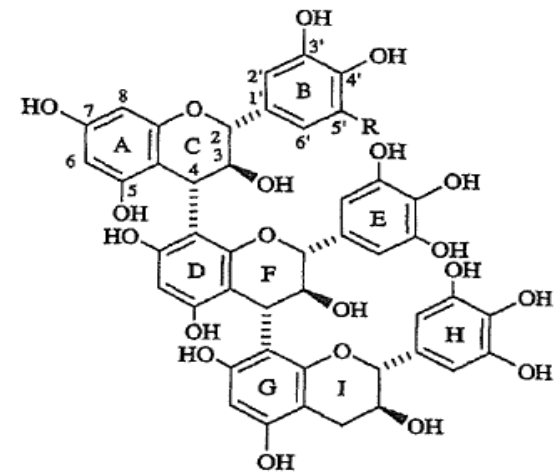


prodelphinidins monomers :



	R ₁	R ₂	R ₃
5 GC-(4α->8) GC	H	OH	OH
6 GC-(4α->8) EGC	OH	H	OH
7 GC-(4α->8) C	H	OH	H

prodelphinidins dimers :



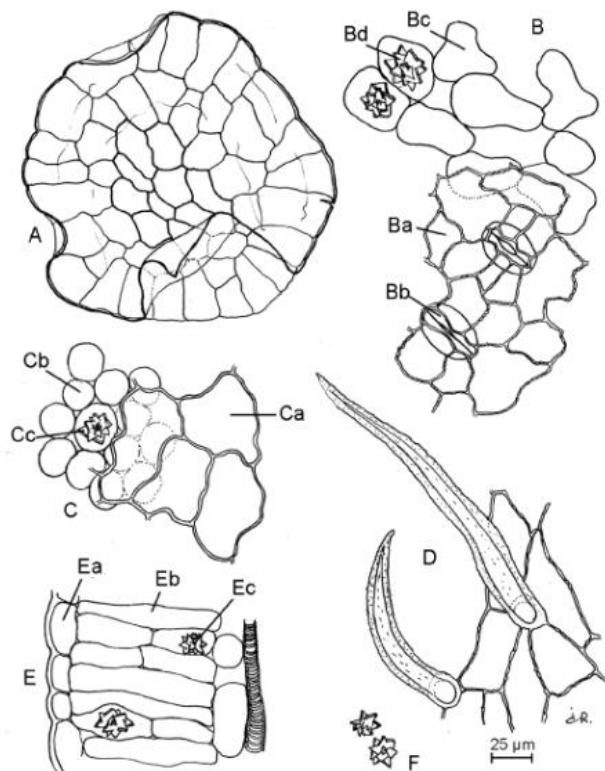
9 C-(4α->8)-GC-(4α->8)-GC	R = H
10 GC-(4α->8)-GC-(4α->8)-GC	R = OH

prodelphinidins trimers :

DEFINITION

Dried leaf of *Ribes nigrum* L.

Content: minimum 1.0 per cent of flavonoids,
expressed as isoquercitroside ($C_{21}H_{20}O_{12}$; M_r 464.4) (dried drug).



IDENTIFICATION

A. The leaf is simple. The lamina may be up to ...

B. Microscopic examination (2.8.23).

C. Thin-layer chromatography (2.2.27).

Blackcurrant Leaf 07/2013:2528

DEFINITION

Dried leaf of *Ribes nigrum* L.

Content: minimum 1.0 per cent of flavonoids, expressed as isoquercitroside ($C_{21}H_{20}O_{12}$; M_r 464.4) (dried drug).

TESTS

Foreign matter (2.8.2): maximum 3 per cent.

Loss on drying (2.2.32): maximum 10.0 per cent, determined on 1.000 g of the powdered herbal drug (355) (2.9.12) by drying in an oven at 105 °C for 2 h.

Total ash (2.4.16): maximum 12.0 per cent.

Blackcurrant Leaf 07/2013:2528

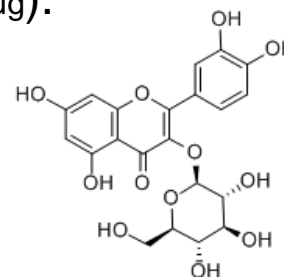
DEFINITION

Dried leaf of *Ribes nigrum* L.

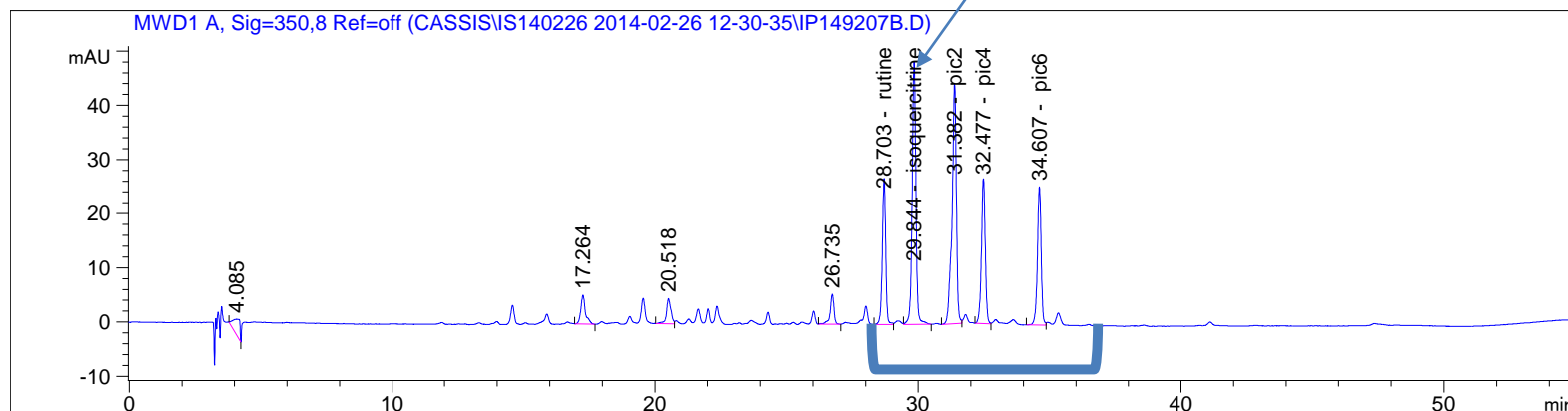
Content: minimum 1.0 per cent of flavonoids,
expressed as isoquercitroside (C₂₁H₂₀O₁₂; M_r 464.4) (dried drug).

ASSAYS

Liquid chromatography (2.2.29).



isoquercitroside



Blackcurrant leaf as herbal medicine

- *Anti-inflammatory effects :*
 - *Methanolic and ethanolic extracts were anti-inflammatory in induced inflammation models in rats.*
 - *Purified proanthocyanidins had the same effect, with efficacy of the same order than indométacine and aspirin.*

Blackcurrant leaf as herbal medicine

- *Analgesic effects :*
 - *ethanolic extract on mice*
- *Diuretic activity :*
 - *Demonstrated on rat with an ethanolic extract*
- *Antihypertensive effects*
 - *Extract on cat. Good lowering effect lasting for 15 -20 min*
 - *An infusion of blackcurrant leaf (20 g/litre), administered intra-venously to normotensive rats at a dose equivalent to 360 mg dried leaf/kg b.w., produced a rapid fall of 45% in arterial blood pressure and the decrease was still 30% after 30 minutes*

Blackcurrant leaf as herbal medicine

- EMA/HMPC/745353/2016 (31 January 2017)
- Committee on Herbal Medicinal Products (HMPC)
- European Union herbal monograph on *Ribes nigrum* L., folium

Blackcurrant leaf as herbal medicine

EMA/HMPC/745353/2016 (31 January 2017)

2. Qualitative and quantitative composition^{1,2}

Well-established use	Traditional use
	<p data-bbox="994 572 1731 658">With regard to the registration application of Article 16d(1) of Directive 2001/83/EC</p> <p data-bbox="994 696 1692 732"><i>Ribes nigrum</i> L., folium (blackcurrant leaf)</p> <p data-bbox="994 772 1315 808">i) Herbal substance</p> <p data-bbox="994 846 1228 882">Not applicable</p> <p data-bbox="994 921 1363 956">ii) Herbal preparations</p> <ul data-bbox="1025 995 1779 1196" style="list-style-type: none"><li data-bbox="1025 995 1595 1031">a) Comminuted herbal substance<li data-bbox="1025 1053 1779 1139">b) Dry extract (DER 7:1), extraction solvent water<li data-bbox="1025 1162 1547 1196">c) Powdered herbal substance

Blackcurrant leaf as herbal medicine

EMA/HMPC/745353/2016 (31 January 2017)

- **Traditional use**
 - Comminuted herbal substance as herbal tea for oral use.
 - Herbal preparations in solid dosage forms for oral use.
 - The pharmaceutical form should be described by the European Pharmacopoeia full standard term.
- Indication 1)
 - Traditional herbal medicinal product for the **relief of minor articular pain**.
 - Indication 2)
 - Traditional herbal medicinal product to **increase the amount of urine** to achieve flushing of the urinary tract as an **adjuvant in minor urinary complaints**.
 - The product is a traditional herbal medicinal product for use in the specified indication exclusively based upon long-standing use.

Blackcurrant leaf as herbal medicine



Biolys[®] Cassis

Pour des articulations souples !

Les feuilles de cassis aident à garder des **articulations souples et saines**. Agrémentée d'arômes naturels et de plantes aromatiques, cette tisane est à la fois intense et délicieuse.

Ingrédients	Utilisation
Cassis feuille*	40%
Pulpe de pomme *	25%
Hibiscus fleur*	20%
Cannelle écorce*	10%
Arômes naturels de cassis et d' orange *	5%



Cassis, feuille	300 mg
Reine-des-prés, fleur	240 mg
Callune vulgaire	240 mg
Menthe poivrée, feuille	225 mg
Romarin	150 mg

- Thank you for your attention

Contact : iteipmai@iteipmai.fr