

## DEVICES

HPLC equipped with a coulometric electrode array detector (CEAD)

HPLC equipped with UV detector

GC equipped with flame ionization detector (FID)

## PHENOLIC ACIDS

Food

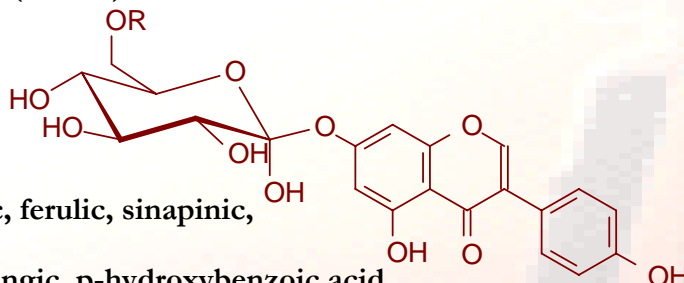
- Cinnamic acid derivatives: caffeic, chlorogenic, rosmarinic, ferulic, sinapinic, p-, m-, o-coumaric acid
  - Hydroxybenzoic acids: gallic, protocatechuic, vanillic, syringic, p-hydroxybenzoic acid
- Minimum sample amount > 20 mg (liquid 0.6 mL). Determined after the enzymatic hydrolysis, no information about the conjugation types.

Urine

- Cinnamic acid derivatives: caffeic, chlorogenic, rosmarinic, ferulic, dihydroferulic, isoferulic, sinapinic, p-, m-, o-coumaric acid
  - Hydroxybenzoic acids: gallic, protocatechuic, vanillic, syringic, p-hydroxybenzoic acid
  - Phenylpropionic and -acetic acids: m-hydroxy and 3,4-dihydroxy acids, homovanillic acid
- Minimum sample volume 0.6 mL (preferably 24 h urine especially to determine dietary phenolic acids, spot urine samples accepted, and results adjusted with urinary creatinine). Both free and conjugated forms can be analysed.

Plasma

Method under development for the same analytes which are included in urine method. Minimum sample volume 0.6 mL. Recommended analyses together with spot urine analyses. Both free and conjugated forms can be analysed.



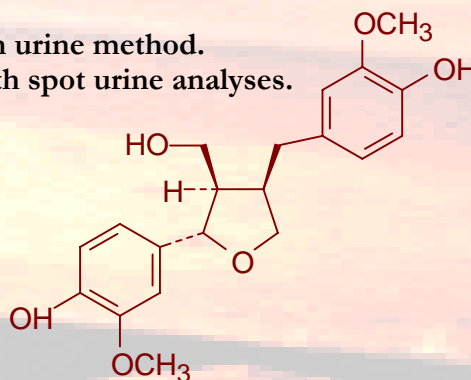
## CATECHINS

Food

- Epicatechin, epigallocatechin, epigallocatechingallate, epicatechingallate, catechin, gallic catechin and catechingallate
- Sample amount > 10 mg (liquid 0.6 mL).

Plasma or serum

Custom-made method can be developed for catechins and their metabolites. Approximate sample volume 0.6 mL.



## CATECHOLAMINES

Urine

- Dopamine, adrenaline and noradrenaline
- Sample volume 3.5 mL.

## ISOFLAVONOIDS

Food

- Total isoflavones measured as daidzein, genistein, glycitein and their 7-O-glucosides (results in aglycone equivalents)
- Sample amount > 10 mg (liquid 0.6 mL).

Plasma or serum

- Daidzein, genistein, glycitein and equol
- Sample volume 0.6 mL.

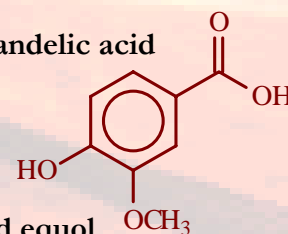
## CATECHOLAMINE METABOLITES

Urine

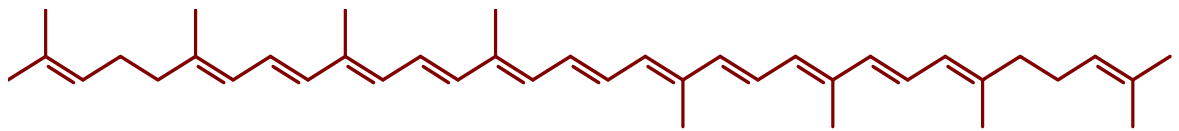
- Homovanillic acid and vanillylmandelic acid
- Sample volume 0.6 mL.

Urine

- Daidzein, genistein, glycitein and equol
- Sample volume 0.6 mL (preferably 24 h urine samples).  
 Faeces
- Daidzein, genistein, glycitein and equol
- Sample amount >20 mg (preferably freeze dried 24 h stool or otherwise standardized amount).



## LIGNANS



### Food

- Plant lignans: isolariciresinol, lariciresinol, secoisolariciresinol, syringaresinol, pinoresinol and matairesinol

Sample amount > 10 mg (liquid 0.6 mL).

### Urine

- Mammalian lignans: enterolactone and enterodiol
- Plant lignans: isolariciresinol, lariciresinol, secoisolariciresinol, syringaresinol, pinoresinol and matairesinol

Sample volume 0.6 mL (24 h urine samples).

## FLAVONOLS, FLAVONES AND FLAVANONES

### Food

- Myricetin, fisetin, eriodictyol, quercetin, luteolin, naringenin, hesperetin, kaempferol, isorhamnetin, rhamnetin

Sample amount > 20 mg (liquid 0.6 mL)

## ANTHOCYANINS

### Food

- Available to order

Urine, plasma and faeces

Methods under development for anthocyanins and their metabolites

## VITAMINS AND CAROTENOIDS

### Food

- $\alpha$ -tocopherol,  $\alpha$ -carotene,  $\beta$ -carotene, lycopene,  $\beta$ -cryptoxhantin, zeaxanthin, lutein, retinol
- Custom-made method can be developed.

### Plasma or serum

- $\alpha$ -tocopherol,  $\alpha$ -carotene,  $\beta$ -carotene, lycopene,  $\beta$ -cryptoxhantin, zeaxanthin, lutein, retinol, vitamin C

Minimum sample volume 0.3 mL (+ 0.3 mL for vitamin C).

## FATTY ACIDS

### Food

- Myristic, palmitic, palmitoleic, stearic, oleic, linoleic,  $\gamma$ -linoleic, homo- $\gamma$ -linoleic, linolenic, arachidonic, eicosapentaenoic, docosanoic, tetradocosanoic, nervonic, docosahexanoic acid

Minimum sample amount > 500 mg.

### Plasma or serum

- Mammalian lignans: enterolactone and enterodiol
- Plant lignans: isolariciresinol, lariciresinol, secoisolariciresinol, syringaresinol, pinoresinol and matairesinol

Minimum sample volume 0.6 mL.

### Faeces

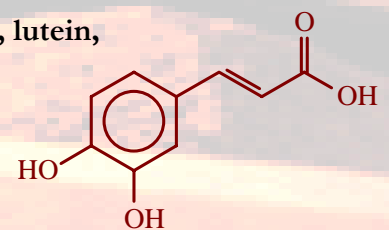
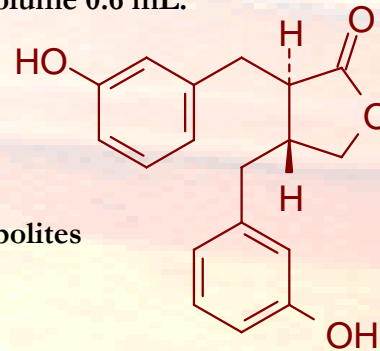
- Mammalian lignans: enterolactone and enterodiol
- Plant lignans: isolariciresinol, lariciresinol, secoisolariciresinol, syringaresinol, pinoresinol and matairesinol

Sample amount > 20 mg (preferably freeze dried 24 h stool or otherwise standardized amount).

### Urine

Custom-made method can be developed for flavonoids and their metabolites. Major metabolites included in the methods for phenolic acids.

Sample volume 0.6 mL.



### Plasma

- Myristic, palmitic, palmitoleic, stearic, oleic, linoleic,  $\gamma$ -linoleic, homo- $\gamma$ -linoleic, linolenic, arachidonic, eicosapentaenoic, docosanoic, tetradocosanoic, nervonic, docosahexanoic acid

Minimum sample volume 0.3 mL.

**IN CASE YOU ARE INTERESTED IN COLLABORATION OR ANALYTICAL SERVICES, PLEASE DON'T HESITATE TO CONTACT US!**

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