

# HealthDiagnostic

## Equol

## Labmaster Equol TR-FIA

*Quantitative time-resolved fluoroimmunoassay*

### The Researcher's new Tool for Studies of Anti-Carcinogenic Potency of Isoflavonoids

Equol is a metabolite produced by intestinal bacteria from the isoflavone Daidzein, which occurs in soy beans<sup>(1-3)</sup>. Recently it was shown that high excretion of Equol is associated with a significant reduction in breast cancer risk<sup>(4)</sup>. Equol showed to have a higher anti-carcinogenic potency, in vitro and in vivo, than Daidzein itself<sup>(5-9)</sup>. These findings make Equol a strong candidate for a natural cancer-protective compound.

The TR-FIA method for plasma Equol provides a new procedure for the assay of Equol for large screening studies.

The method is reliable, practical, sensitive and specific for Equol. Crossreaction does not influence the results.

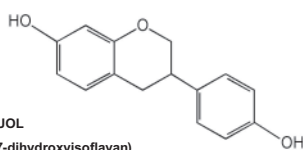


# Equol TR-FIA

## WHAT IS EQUOL?

### Background

Isoflavonoids are a group of diphenolic hormone-like compounds of dietary origin that are of great interest particularly because of their anti-carcinogenic potency, but also because of their association with other Western diseases like coronary heart disease (10-12). The isoflavonoids occur mainly in soybean products and clover seeds and leaves (13-15). When consumed, isoflavonoids are converted by the intestinal microflora to biologically active secondary plant metabolites. Ingested glycosides are rapidly hydrolyzed by the gut bacteria, whereafter the aglycones undergo further metabolism. In this way the aglycone daidzein, which is formed from formononetin, is reduced by the intestinal microflora to the **isoflavan equol** (about 70%) and *O*-desmethylangolensin (about 5-20%) (1,2,3,16,17).



EQUOL  
(4',7-dihydroxyisoflavan)

Equol was identified in human urine for the first time in 1982 (18,19). Recently it was shown that equol has higher anti-carcinogenic potency, both *in vitro* and *in vivo*, than daidzein itself.

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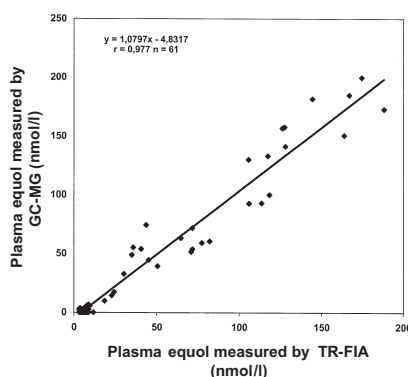
## PERFORMANCE CHARACTERISTICS

### Specificity of Equol Antiserum Precision

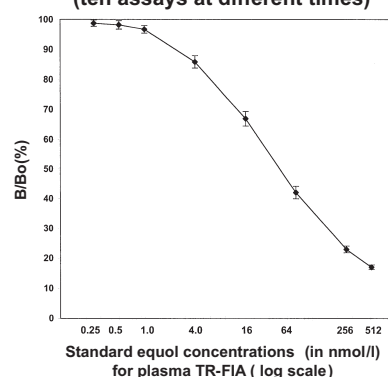
Compound	% cross-reactivity
Equol	100.0
6-OH-daidzein	0.0
Genistein	0.0
8-OH-daidzein	0.0
O-desmethylangolensin	0.0
Daidzein	0.8
5-OH-equol	14.0
Dihydrogenistein	12.0
Dihydrodaidzein	4.0
Cis-4-OH-equol	10.7
Dehydroequol	42.3
Trans-4-OH-equol	35.0
4'-O-methylequol	275.0

Sample	Concentration (nmol/l)	Intra-assay CV (%)	Inter-assay CV (%)
Plasma method			
Low	4.5	6.5 (n=10)	9.7 (n=10)
Medium	52.6	5.5 (n=10)	6.0 (n=10)
High	133.7	6.3 (n=10)	5.4 (n=10)
Urine method			
Low	203.9	6.9 (n=10)	7.7 (n=10)
Medium	1663.5	3.4 (n=10)	7.4 (n=10)
High	6143.9	3.9 (n=10)	7.6 (n=10)

### Correlation between plasma TR-FIA and GC-MS



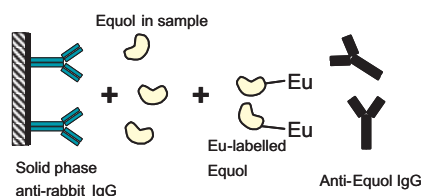
### Standard Curve of plasma Equol for TR-FIA (ten assays at different times)



## THE METHOD

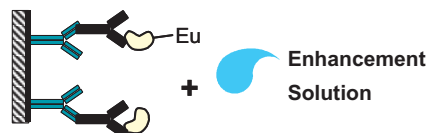
### COMPETITIVE IMMUNOASSAY

- A sample preparation by hydrolyze and ether extraction

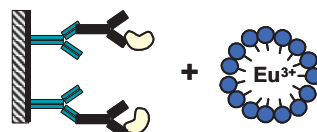


- 90 minutes incubation

- Aspiration and washing



- 5 minutes incubation



- Fluorescence measurement

## ORDERING INFORMATION

### Labmaster Equol TR-FIA

- Cat. no.: 1212-2002
- Includes:
  - microtitration plate (96 wells)
  - reagents for testing standards and samples
  - instructions for use



Labmaster Ltd.  
Fiskarsinkatu 11,  
FIN-20750 Turku, Finland  
Tel. +358-2-276 0555  
Fax: +358-2-2760550  
www.labmaster.fi