

# HealthDiagnostic

# ● Genistein



## Labmaster Genistein TR-FIA

*Quantitative time-resolved fluoroimmunoassay*

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

Genistein is a one of the weakly estrogenic isoflavones, which occurs in soy beans and in smaller amounts in some other beans and plants.

Isoflavonoids, specifically Genistein and Daidzein, have been implicated in the prevention of cancers, possibly through multiple effects.

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

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



# Genistein TR-FIA

## WHAT IS GENISTEIN ?

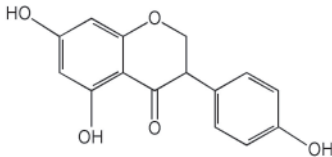
### Background

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.

These isoflavonoids are derived mainly from soy-protein products, while clover seeds and leaves are a rich source of Biochanin A and Formononetin.



Genistein precursors such as Genistin and Biochanin A are converted by the intestinal microflora to Genistein into gut.



GENISTEIN (4',5,7-trihydroxyisoflavone)

### REFERENCES:

- Heinonen S., Wähälä K. and Adlercreutz H., *Anal Biochem* **274** (1999) 211-219.
- Shutt D.A., Weston R.H. and Hogan J.P., *Austr J Agric Res* **21** (1970) 713-722.
- Adlercreutz H. *Front gastrointest Res* 1988; **14**: 165-176.
- Ingram D., Sanders K., Kolybaba M. and Lopez D., *Lancet* **350** (1997) 990-994.
- Sathyamoorthy N. and Wang T.T.Y., *Eur J Cancer* **33** (1997) 2384-2389.
- Rowland I, Wiseman H, Sanders T, et al. *Biochemical Society Transactions* 1999; **27**:304-308.
- Markiewicz L., Garey J., Adlercreutz H. and Gurdipe E., *J Steroid Biochem Molec Biol* **45** (1993) 399-405.
- Hodgson J.M., Croft K.D., Puddey I.B., Mori T.A. and Beilin L.J., *J Nutr Biochem* **7** (1996) 664-669.
- Arora A, Nair MG, Strassburg GM, Arch. *Biochem. Biophys.* 1998; **356**:133-141.
- Adlercreutz H. and Mazur W., *Phyto-oestrogens and Western diseases. Ann Med* **29** (1997) 95-120.
- Vanharanta M., Vuolilainen S., Lakka T.A., van der Lee M., Adlercreutz H. and Salonen J.T., *Lancet* **354** (1999) 2112-2115.
- Adlercreutz H., *Phyto-oestrogens and cancer. Lancet Oncology* (2002); **3**: 364-373
- Bradbury R.B. and White D.E. (Edited by Haaris R.S., Marrian G.F., and Thimann K.V.). *Academic Press Inc.*, New York (1954) pp. 207-233.
- Eldridge A. and Kwok W. F., *Journal of Agriculture and Food Chemistry* **31** (1983) 394-396.
- Price K.R. and Fenwick G.R., *Naturally occurring oestrogens in foods - A review. Food Add Contam* **2** (1985) 73-106.
- Setchell K.D.R. and Adlercreutz H.: (Edited by Rowland I.), *Academic Press*, London (1988) pp. 315-345.
- Kelly G.E., Nelson C., Waring M.A., Joannou G.E. and Reeder A. Y., *Clin Chim Acta* **223** (1993) 9 - 22.
- Axelsson M., Kirk D.N., Farrant R.D., Cooley G., Lawson A.M. and Setchell K.D.R., *Biochemical Journal* **201** (1982) 353-357.
- Adlercreutz H., Fotsis T., Heikkinen R., Dwyer J. T., Woods M., Goldin B.R. and Gorbach S.L. *Lancet* **2** (1982) 1295-1299.

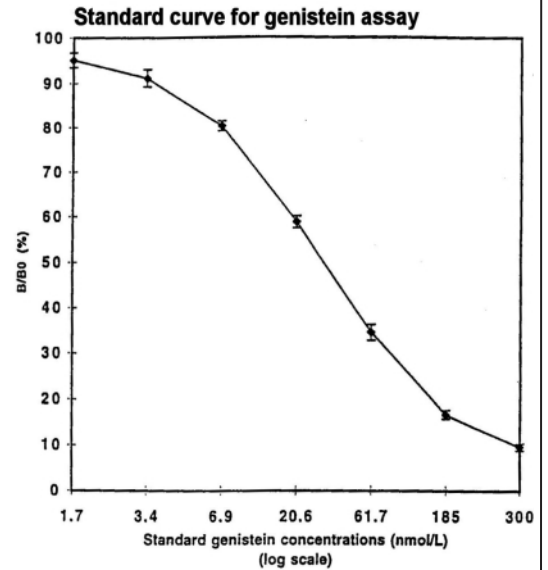
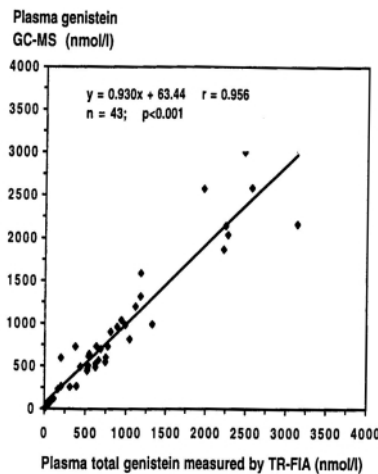
## PERFORMANCE CHARACTERISTICS

### Specificity of Genistein Antisera

Compound	% cross-reactivity
Genistein	100.0
Daidzein	2.5
Biochanin A	500.0
Daidzin	1.0
Dihydrogenistein	11.3
Genistin	7.6
Equol	0.1
O-Desmethylangolensin	0.0
Luteolin	0.0
Quercetin	0.0

### Precision

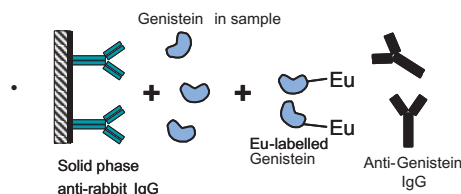
Intra- and interassay CVs for plasma genistein by TR-FIA			
Sample	Concentration (nmol/l)	Intra-assay CV (%)	Inter-assay CV (%)
Plasma method			
Low	4.3	4.7 (n=8)	6.7 (n=8)
Medium	20.8	3.8 (n=8)	5.9 (n=8)
High	73.8	2.9 (n=8)	6.1 (n=8)



## THE METHOD

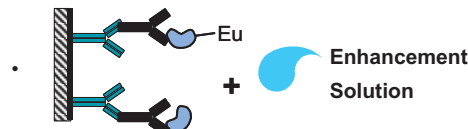
### COMPETITIVE IMMUNOASSAY

- A sample preparation by hydrolyze and ether extraction

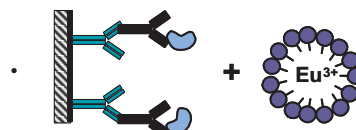


- 90 minutes incubation

- Aspiration and washing



- 5 minutes incubation



- Fluorescence measurement

## ORDERING INFORMATION

### Labmaster Genistein TR-FIA

- Cat. no.: 1212-2003
- 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