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Czech J. Food Sci.

**Sosvorová L., Lanková
P., Bičíková M.,**

**Prokudina E.A., Al
Malarik N., Lapčík O.**

ELISA for free *S*-equol in human urine

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The popularity of phytoestrogen food supplements of plant origin steadily increases. They are used to solve the problems related to the climacterium. Their efficiency depends on woman's capability to metabolise the active components – isoflavonoids. Women able to convert daidzein to *S*-equol are supposed to get a greater benefit from these supplements. To determine *S*-equol urine levels, the competitive ELISA was developed. Carboxymethylequol coupled to BSA via 4'-*O*-position was used as an immunogen. The assay conditions, including the concentrations of the coating antigen and antisera, were optimised. The detection limit was 0.1 ng/ml (5 pg/well) and 50% intercept was 1 ng/ml (50 pg/well). The intraassay coefficients of variation (*CV*) varied from 4.7% to 9.9%, for the interassay *CV* the

corresponding values of 2.6– 11.6% were obtained. The recovery of the standard added to urine ranged between 89% and 104%. All examined samples were obtained from women in climacterium. The volunteers had been taking phytoestrogen food supplements for 3 months. The urine samples were collected before and after the therapy. The levels of free urinary S-equol after the therapy ranged between 0 ng/ml and 42.4 ng/ml. The equol production was observed in 57% of the examined patients. The laboratory results were confronted with patients' subjective evaluations.

Keywords:

isoflavonoids; metabolism; menopause

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