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Czech J. Food Sci.

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Rapid immunoassays for detection of anabolic nortestosterone in dietary supplements

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An enzyme immunoassay (ELISA) and an immunochromatographic strip were designed for a rapid detection of nortestosterone in dietary supplements. Two polyclonal antibodies and two types of nortestosterone-protein coating conjugates were tested to develop the most appropriate method. Under optimal experimental conditions, the most sensitive ELISA achieved the IC_{50} and the limit of detection values of 6.41 and 0.09 ng/ml, respectively. The assay specificity was tested measuring cross-reactivity of several steroids. The interference with the assay was negligible (< 0.1%), except for cross-reactivity with

another frequently abused steroid testosterone (23%). The optimised gold particle-based immunochromatographic strip provided in semi-quantitative test a visual detection limit of 1 ng/ml. None of these methods showed the interference using a filtrate of the suspension of non-contaminated sample. After the validation for particular matrices, the ELISA and the strip test could be useful tools for a rapid analysis of nortestosterone in crude extracts of dietary supplements.

Keywords:

19-nortestosterone; ELISA; colloidal gold immunoassay; strip test

[fulltext]