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Determination of Ginsenoside Rf and Rg_2 from Panax ginseng Using An Enzyme Immunoassay

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We have developed the enzyme immunoassay(EIA) to quantify a trace amount of ginsenoside Rf(Rf), one of the glycosides of protopanaxatriol from Panax ginseng. A carrier protein of bovine serum albumin(BSA) was coupled to the carbohydrate component of Rf using periodate oxidation method. The antibodies were raised in rabbits using Rf-BSA conjugate as immunogen. The competitive indirect EIA for the determination of Rf was used. The working range of the assay was 0.01-10ng per assay. The anti-Rf antiserum cross-reacted with ginsenoside Rg_2(105%), which is also component of Panax ginseng and has very similar chemical structure with Rf. These results suggest that the anti-Rf antiserum also could be used for the quantitation of ginsenoside Rg_2 as well as ginsenoside Rf. In a comparative assay of EIA and HPLC the linear regression equation and correlation coefficient for the two methods were y(EIA) = 1.31x(HPLC) - 11.48 and 0.98, respectively.