Production and characterization of rabbit polyclonal antibodies to almond (Prunus amygdalus L) major storage protein.

Acosta, MR, Roux, KH 1999
Journal Of Agricultural And Food Chemistry
47:4053-4059.

Abstract:
Rabbits were immunized with purified almond major protein (AMP), the primary storage protein in almonds. Rabbit antiAMP polyclonal antibodies (PA) could detect AMP when as little as 1-10 ng/mL were used to coat microtiter plates in a noncompetitive enzyme linked-immunosorbent assay (ELISA). Competitive inhibition ELISA assays detected the AMP down to 300 ng/ml. PA recognized the AMP in protein extracts from all U.S. major marketing cultivars of almonds (Mission, Neplus, Peerless, Carmel, and Nonpareil) with specific reactivity of 52.6 -75% as compared to that of the AMP alone. Immunoreactivity of protein extracts prepared from commercial samples of blanched almonds, roasted almonds, and almond paste was respectively reduced by 50.0%, 56.6% and 68.4% (noncompetitive ELISA) when compared to the immunoreactivity of the AMP. Moist heat (121 "C. 15 min) pretreatment of the AMP reduced the PA reactivity by 87% (noncompetitive ELISA). Exposing AMP to pH extremes (12.5 and 1.5-2.5) caused a 53% and 57% reduction in PA reactivity. respectively (noncompetitive ELISA). PA showed some cross-reactivity with the cashew major globulin. and to a lesser extent, the Tepary and Great Northern bean major storage protein (7s or phaseolin). The presence of almonds in a commercial food was detected using PA in a competitive ELISA.