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A Novel and Simple Method of Insolubilization of Ovomuroid in Cookies Prepared from Batter Containing Egg White

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Heat stable ovomucoid (OM) is a major allergenic protein of chicken eggs, which are widely used in wheat flour processed food. PBS soluble OM remained in the cookies prepared by the usual method. A procedure for insolubilizing OM in batter was designed for cookies supplemented with egg white. Immunoblotting and ELISA competitive inhibition using rabbit anti-OM serum were used to analyze soluble OM in the cookies. PBS soluble OM remained both in the batter and the dough as observed in control egg white solution. Soluble OM in the cookies made from batter baked at 180°C for 8 min decreased to about one-tenth of the batter, while it decreased to almost nothing in bread made from dough baked at 180°C for 8 min. When the batter was mixed for 15 min before baking at 180°C for 12 min, PBS soluble OM disappeared in the cookies as in bread. OM in the cookies was soluble with SDS2-ME solution, but with neither the PBS nor SDS solution. This suggests that a disulfide exchange reaction between OM and wheat components is induced in the cookies. Both mixing and baking time of batter played an important role in the elimination of PBS soluble OM in the cookies. This simple method is useful for insolubilization of OM in processed foods made from batter supplemented with egg white.

Keywords: [insolubilization](#), [ovomuroid](#), [egg white](#), [wheat flour](#), [batter](#), [dough](#)

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