P-301

Effect of Egg Component on Stability of IgY Antibody Activity to *In Vitro* Digestion

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The stability of anti-*Y. ruckeri* IgY activity during *in vitro* digestion of the IgY after addition of egg component was investigated using sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) and enzyme-linked immunosorbent assay (ELISA). Though heavy chain and light chain of anti-*Y. ruckeri* IgY were partially hydrolyzed during *in vitro* digestion with pepsin for 2hr after addition of egg fractions(egg yolk and egg white), they were clearly seen in SDS-PAGE. The anti-*Y. ruckeri* IgY activities after digestion of the mixtures containing egg yolk and egg white were 35% and 61% in ELISA, respectively. SDS-PAGE showed that the heavy chain of anti-*Y. ruckeri* IgY disappeared after digestion with pepsin for 1hr of the mixtures containing egg white components (ovalbumin, ovomucin, lysozyme and ovomucoid), but it was seen in the mixture containing ovotransferrin. The light chain of anti-*Y. ruckeri* IgY was not seen in the mixture containing ovomucin and ovomucoid, but was seen in the mixtures containing ovalbumin, ovotransferrin and lysozyme after digestion with pepsin for 1hr. The light chain of anti-*Y. ruckeri* IgY was clearly seen in the mixtures containing ovotransferrin and lysozyme even after digestion for 2hr. Among digestion with pepsin for 1hr of the mixtures containing egg white components(ovalbumin, ovomucin, lysozyme, ovomucoid and ovotransferrin), the anti-*Y. ruckeri* IgY activities were found only in the mixtures containing ovotranferrin and were 38%, and 15% in ELISA after digestion for 1hr and 2hr, respectively. After digestion with stomach extract from rainbow trout for 2hr the anti-*Y. ruckeri* IgY activities were 14% and 69% in the mixtures containing egg white and whole egg, respectively.