Analysis of contaminants and by products in Antitoxins production

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Brazilian antitoxins are constituted by $F(ab)'_2$ fragments, prepared from antivenin horse immunoglobulins treated with pepsin. This protease hydrolyzes IgG molecules in the hinge portion of heavy chain. In this work we studied the hydrolytic products of pepsin reaction in antitoxins. Antitoxins samples were submitted to two dimensional gel electrophoresis. Protein spots were submitted to trypic digestion and MALDI-TOF mass spectrometry analyses. Most spots were isoforms of $F(ab)'_2$. Intact heavy chains were also detected, showing that pepsin didn't cleave all immunoglobulin. Proteins with low molecular weight were also detected as immunoglobulin fragments. These results suggest that pepsin also hydrolyses IgG in other sites different from hinge. In some samples horse albumin fragments were detected. These results are in accordance with the incidence of adverse effects in immusera used in Brazil.

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