

عنوان مقاله:

Reduction of Purification Time of Polyspecific Equine F(ab')₂ Antivenom against Scorpion Envenomation

محل انتشار:

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خلاصه مقاله:

Background and Aims: In this study we improved the purification of immunoglobulins from equine antiserum raised against the venom of 6 types of scorpion species. Caprylic acid (octanoic acid), a fatty acid, was found to have no effect on the activity of the enzymes pepsin, which is used in antivenom purification to digest Fc fragment of immunoglobulins to obtain F(ab')₂. **Materials and Methods:** A new method was developed for the production of F(ab')₂ antivenom whereby whole equine antiserum was mixed with equal amount of 0.15 M HCl and pH 3.4 with pepsin 660 mg/L of diluted antivenom and incubated for 4 h at 37°C. After digestion the pH were brought to 4.8 with sodium hydroxide solution (1.5 M) and then 1.5% caprylic acid and 10% ammonium sulfate was added and mixed for 60 minutes and passed through filter paper. **Results:** Caprylic acid caused precipitation of albumin, and ammonium sulfate reduced turbidity of solution, resulting in a reduced protein load presented to the digestion enzymes culminating in substantial reductions in processing time. **Conclusions:** The equine F(ab')₂ obtained using these novel caprylic acid methods were comparable in terms of yield, purity and specific activity to those obtained by multi-step and time consuming conventional salt fractionation with ammonium sulfate.

کلمات کلیدی:

Antiscorpion venom, Caprylic acid, Equine, Scorpion, اسب، کاپریلیک اسید، F(ab')₂، پیپسین، جداسازی اجزای آنتی ونوم، رسوب آمونیم سولفات

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