



ABSTRACT

The research explains methods to produce haemorrhagic septicaemia vaccines by using different adjuvants and finally evaluate the immunogenicity of these vaccines in experimental animals. For this purpose *Pasteurella multocida* cultured in casein sucrose yeast medium and the growth was harvested with the aid of 0.5% formalin. Oil adjuvants vaccines were prepared by adding nearly equal volume of olive, almond and *nigella sativa* oil in inactivated bacterial suspension contained 1.5 mg/ml dry bacterial mass. Anhydrous lanolin was added 5% to emulsify the mixture. Silver nanoparticles were prepared by adding 125 ml grapes fruit (*vitis vinifera*) extract in 50 ml silver nitrate solution (50 mM) and 75 ml distilled water. Solution was kept in dark for 48 hours to obtain silver nanoparticles. Characterization of silver nanoparticles was done by transmission electron microscope and x-ray diffraction techniques. The average mean size of silver nanoparticles was found to be 18-20 nm. Silver nanoparticles vaccine was prepared by adding 0.8 mg silver nanoparticles in 1 ml bacterial suspension containing 0.75 mg dry bacterial mass. Sterility and safety tests were done during and after vaccine preparation to check any contamination and adverse effect of vaccines. The vaccines were found to be safe and sterile at each stage. Animal trials were done on rabbits to check the immune response against each vaccine. Indirect haemagglutination test was used to check the antibodies response of animals for each vaccine. Results indicates that *nigella sativa* oil induce strong immune response when used as adjuvant *P. multocida* vaccine. It gave high geometric mean titer of 203.19 after 48 days post vaccination. Whereas almond oil was weak immune stimulator when used as an adjuvant in *P. multocida* vaccine and GMT of 50.80 was obtained after 48 days post vaccination. Olive oil and nanoparticles induced moderate immune response and gave GMT's of 80.63 and 101.60 respectively.