

ABSTRACT

In this research, glucose oxidase enzyme was immobilized on zinc oxide nanoparticles. Zinc oxide nanoparticles have attained great attention in biomedical field especially in wound healing. The activity of glucose oxidase was increased after immobilization with zinc oxide nanoparticles and it gives better results as compared to others. Zinc oxide nanoparticles were prepared by using zinc nitrate hexahydrate and sodium hydroxide in co precipitation method. From UV-Visible spectrophotometric analysis, it was noticed that zinc oxide nanoparticles showed the maximum absorbance at 378nm. Scanning electron microscopy showed spherical shaped nanoparticles. By plotting histogram, 44nm average size was observed. For immobilization, first surface of nanoparticles was modified by using L-cystein HCl. After surface modification, glucose oxidase was immobilized with nanoparticles by using gluteraldehyde. From UV-Visible spectrophotometric analysis, it was observed that after immobilization enzyme activity was increased as compare to free enzyme. This GoX/ZnONPs bioconjugate was used in wound healing. In comparison with other study groups, bioconjugate showed better wound healing activity.