ABSTRACT

The present study deals with the "Microbial production of metal Gluconates" specifically, it provides a method for the conversion of glucose into gluconic acid and its derivatives using the enzyme glucose oxidase.The activity of Gox has been checked by assey method. Conditions like Substrate, Concentration of substrate, Temperature, pH, fermentation period and different phosphate sources were optimized during fermentation. It was concluded that glucose oxidase activity is maximum at 35 ˚C of 5.5 pH and 44 hours of incubation at 100 rpm and at these conditions maximum gluconic acid is produced.Two different methods are used for production of gluconic acid;Sulphuric acid method and Oxalic acid method.Derivatives of gluconic acid(Ca-lactate gluconate,Sodium gluconate,Pot-gluconate.Zinc-gluconate,Copper gluconate) are formed by using Double displacement and Direct method.Among these methods,direct method gives the better yield.The percentage yield of Ca-lactate gluconate is 73%,Sodium gluconate is 89.63%,Pot-gluconate is 81.93%.Zinc-gluconate is 92.86%,Copper gluconate is 81.53%.