ABSTRACT

Cefazolin Sodium is a first generation Cephalosporin having a broad spectrum activity and exhibits greater activity against Klebsilla Pneumoniae. Cefazolin is used for Staphylococcal infections of skin, upper and lower respiratory tract and renal infections. Synthetic methods were studied with respect to yield, quality, purification and stability. Different methods were tried to get economic standards like Acylation, Acid Chloride, Silylation and Condensation etc.,

Cefazolin Sodium (Sodium (6R, 7R)-3-[[(5-methyl-1,3,4-thiazol-2-yl)sulphanyl]methyl]-8-oxo-7-[(1H-tetrazol-1-ylacetyl)amino]-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate) was prepared by using 7-ACA (7-Amino Cephalosporanic Acid) and TAA (1H-Tetrazole acetic acid) by Acylation reaction using Methylene Chloride as a Solvent and Pivaloyl Chloride as an activating agent. It has been found that Pivaloyl Chloride was a good activating agent rather than DFCCS reagent. Various parameters were optimized viz, time duaration, temperature, pH, catalyst, acid, basis, Coupling and activating agents etc., More than 100% product yield could be achieved in the present investigation with assay limit more than 98% according to BP and USP standards. Its stability, quality and synthetic verification was achieved through analysis by HPLC, GC, UV, IR, TLC, and many other physical tests but decrease in quality with the passage of time with effect of temperature and relative humidity was understood monitored by stability studies thus Cefazolin Sodium an effective pharmacological product prepared is useful pharmacologically for our industrial and medical fields.