V Ganesan, Pharmaceut Anal Acta 2013, 4:2
http://dx.doi.org/10.4172/2153-2435.S1.017

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Pharmaceutics & Novel Drug Delivery Systems
April 08-10, 2013 Hilton Chicago/Northbrook, USA

Studies on the crystal forms of Moxifloxacin: Preparation, characterization and dissolution profile

V Ganesan
The Erode College of Pharmacy and Research, India

Different crystal forms of Moxifloxacin were prepared using solvents of varying polarity. A range of solvents like benzene (nonpolar, aprotic), ethyl acetate, acetone, chloroform, dichloromethane (polar, aprotic), methanol, ethanol, isopropanol, distilled water (polar, protic), and dimethylformamide (polar, aprotic) were used for crystallization. The drug showed poor solubility in less polar solvents like benzene, ethyl acetate, chloroform, dichloromethane and acetone hence, these solvents could not be used for crystallization process. Four crystal forms were obtained from different solvents viz: MOXI - I (distilled water), MOXI - II (ethanol), MOXI - III (methanol) and MOXI - IV (isopropanol 70%). Crystallization of Moxifloxacin from ethanol (MOXI - II) produced plate like crystals that exhibited highest solubility and dissolution rate than other crystals due to its lowest melting point and smaller particle size (110μm) having maximum surface area. Characterization of the crystal forms were done on the basis of their melting points, DSC and DTA thermographs, IR Spectra and PXRD analysis. All the crystals gave different melting points and DSC, DTA thermographs were given much information about the existence of polymorphism in Moxifloxacin. An exothermic peak (energy released from the bond breaking) was observed in MOXI – II and MOXI - III at 276.99˚C and 270.13˚C might be due to presence of impurities or oxidative decomposition which was absent in the form of MOXI - I and MOXI – IV. Three types of polymorphs were identified based on thermal analysis and it was further confirmed with IR spectral technique as well as PXRD analysis. It is concluded finally that the study has indicated the existence of three polymorphic forms of Moxifloxacin.

Biography

V Ganesan has completed his Ph.D. at the age of 35 years from Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India and he has earned his B.Pharm from Madurai Medical College, Madurai and M.Pharm (Industrial Pharmacy) from Annamalai University, Chidambaram, Tamilnadu. He is the Principal, Professor and Head, Department of Pharmaceutics of The Erode College of Pharmacy and Research, one of the Pioneer institutions in south India. He has published more than 35 papers in reputed journals and presented more than 40 papers in conferences. He is the Receipient of Best Teacher Award, 2012 Conferred from The Tamilnadu DrMGR Medical University, Chennai, Tamilnadu and Best Faculty Award-2012 from Nehru Group of Institutions, Thrissur, and Kerala.

sankarv_2003@yahoo.co.in