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(54) Title of the invention : An Efficient Formulation of Saccharin Sodium Based Co-crystal for Solubility Enhancement of Lamotrigine

<p>(51) International classification :A61K0009140000, C07D0213820000, C07D0253075000, A61K0009510000, C07D0275060000</p> <p>(86) International Application No Filing Date :PCT// :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number Filing Date :NA :NA</p> <p>(62) Divisional to Application Number Filing Date :NA :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Ramu Samineni Address of Applicant :Assistant Professor, Faculty of Pharmacy, Department of Pharmaceutical Sciences, Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur - 522213, Andhra Pradesh, India. Guntur -----</p> <p>2)Dr. Jithendra Chimakurthy</p> <p>3)Swathi Thumula</p> <p>4)Dr. B. Jeevan Kumar</p> <p>5)Anusha Kota</p> <p>6)M. Sabareesh</p> <p>7)Dr. U. Mohan Kumar</p> <p>8)Tirumala Chetty Sudheer Kumar</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p>1)Ramu Samineni Address of Applicant :Assistant Professor, Faculty of Pharmacy, Department of Pharmaceutical Sciences, Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur - 522213, Andhra Pradesh, India. Guntur -----</p> <p>2)Dr. Jithendra Chimakurthy Address of Applicant :Associate Professor and Principal, Department of Pharmaceutical Sciences, Vignan's Foundation for Science, Technology and Research (Deemed to be University), Vadlamudi, Guntur - 522213, Andhra Pradesh, India. Guntur -----</p> <p>3)Swathi Thumula Address of Applicant :Assistant Professor, Department of Chemistry, Sreenidhi Institute of Science and Technology, Yammapet, Ghatkesar, Hyderabad - 501301, Telangana, India. Hyderabad -----</p> <p>4)Dr. B. Jeevan Kumar Address of Applicant :Assistant Professor, Department of Pharmacy Practice, Krishna Teja Pharmacy College, Chadalawada Nagar, Renigunta Road, Tirupati - 517506, Andhra Pradesh, India. Tirupati -----</p> <p>5)Anusha Kota Address of Applicant :Associate professor, Department of Pharmaceutical Analysis, K.C.Reddy institute of Pharmaceutical sciences Jangamguntlapalem Post, Medikondur Mandal, Guntur - 522438, Andhra Pradesh, India. Guntur -----</p> <p>6)M. Sabareesh Address of Applicant :Assistant Professor, Department of Pharmaceutics, Sree Vidyanikethan College of Pharmacy, Sree Sainath Nagar, A.Rangampet, Tirupati - 517102, Andhra Pradesh, India. Tirupati -----</p> <p>7)Dr. U. Mohan Kumar Address of Applicant :Professor and Principal, Department of Pharmaceutics, Nirmala college of pharmacy, Ukkayapalli, Hyderabad - Chennai Bypass, Kadapa - 516002, Y.S.R. Dist, Andhra Pradesh, India. Kadapa -----</p> <p>8)Tirumala Chetty Sudheer Kumar Address of Applicant :Associate professor, Department of Pharmaceutical Regulatory Affairs, Krishna Teja Pharmacy College, Chadalawada Nagar, Renigunta Road, Tirupati -517506, Andhra Pradesh, India. Tirupati -----</p>
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(57) Abstract :

The present invention discloses a method for improving the solubility of the drug Lamotrigine. Specifically, cocrystals of LTG with Sodium Saccharin by the Co-grinding, Solvent drop and solvent evaporation technique. For the novel cocrystals, structural characterization was done by powder x-ray diffraction (PXRD), infrared spectroscopy (FT-IR), differential scanning Calorimetry (DSC), ¹H liquid NMR, and scanning electron microscopy (SEM). In vitro evaluations were done by aqueous solubility and in vitro dissolution drug release and these were compared with the parent drug molecule. The prepared multicomponent co-crystal formulations and pure Lamotrigine were evaluated for intrinsic solubility analysis in case of pure Lamotrigine showed 0.154 (mg/ml), LT-SAC CF I showed high solubility values 7.642. In case of LT-SAC CF I showed 49.6 folds solubility increases compared to pure Lamotrigine.

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