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Design, Optimisation and Evaluation of Aceclofenac Fast Dissolving Tablets Employing Starch Xanthate-A New Superdisintegrant

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Abstract : The purpose of the present study is to evaluate starch xanthate as a superdisintegrant in the formulation of fast dissolving tablets of poorly soluble drugs. Starch xanthate was synthesized by gelatinization process. The synthesized starch xanthate was subjected to physical and micromeritic evaluation. To establish as starch xanthate as a superdisintegrant, fast dissolving tablet of aceclofenac was prepared employing starch xanthate in different proportions in each case by direct compression method employing 2^3 factorial design. All fast dissolving tablets prepared were evaluated for drug content, hardness, friability, disintegration time and other dissolution characteristics like PD_5, DE_5 and K_1.The starch xanthate prepared was found to be fine, free flowing slightly crystalline powder. Starch xanthate exhibited good swelling in water. The swelling index was 50% all micrometric properties indicated good flow and compressibility needed for solid dosage from manufacturing. All the fast dissolving tablets formulated employing starch xanthate were of good quality with regard to drug content, hardness and friability and fulfilled the official (IP/USP) requirements of compressed tablets with regard to the above mentioned physical properties. Starch xanthate was found to be a superdisintegrant which enhanced the dissolution efficiency when combined with sodium starch glycolate, crosscarmellose sodium, with the aceclofenac and hence it could be used in the formulation of fast dissolving tablets to provide immediate release of the contained drug within 5minutes.

Key Words : Fast dissolving, Superdisintegrant, Starch xanthate, Dissolution efficiency.

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