In Vitro Dissolution Studies of Different Brands of Sustained Release Diclofenac Sodium

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Background: Diclofenac belongs to class known as NSAID. Diclofenac is commonly prescribed as non-steroidal anti- inflammatory substance (NSAIS) that is indicated to reduce inflammation, reducing pain in conditions such as acute injury, musculoskeletal, it is used especially to treat rheumatoid arthritis, osteoarthritis, spondyarthritis, gout attacks, pain management in case of kidney stone. It is very effective in the management of menstrual pain, ovulatory pain, acute migraines, post-operative and post-traumatic pain, female breast cancer and pain associated with bony metastases. In vitro dissolution study is an important indicator for evaluation of the best formulation and also in the understanding of possible risks related to specific gastrointestinal environment, dose dumping, food effects on bioavailability and interaction with other drugs. In Pakistan there are number of National as well as Multinational pharmaceutical companies manufacturing are marketing sustained release diclofenac sodium matrix tablet. During the maturation of red wines, the anthocyanins are transformed (via reactions with copigments and metabolic products) into pyranoanthocyanins.

Objective: Commercially available national three brands and one international brands of diclofenac sodium sustained release matrix tablets were studied for in vitro comparative dissolution.

Methodology: Diclofenac sodium sustained release matrix tablets were purchased from various local pharmacies. All the brands were tested, according to USP specifications for their uniformity of weight, and dissolution of these tablets were study in simulated gastric medium (pH 1.2) for 2 hours' time period and simulated intestinal medium (pH 6.8) for 1 hours' time period using USP reference dissolution apparatus.

Results and conclusion: All the national and international brands complied with the USP in-vitro dissolution specification for drug releases in simulated gastric medium. Within the specified time period, however one national brand (Code: DS-3) released more than 90% drug within 45 minutes in intestinal medium.