

# DEVELOPMENT OF COMPOSITION AND TECHNOLOGY OF METFORMIN HYDROCHLORIDE EXTENDED RELEASE TABLETS

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Presently distribution of pancreatic diabetes accepted epidemiology character and it is one of main reasons of population death rate in majority of the world countries. Metformin hydrochloride is an orally administered medicine, which is widely used in the management of type-2 diabetes, a common disease that combines defects of both insulin secretion and insulin action. It is of large interest creation of antidiabetic medicines of metformin hydrochloride in the form of extended release tablets.

The aim of the current study was to design an oral sustained release matrix tablet of metformin hydrochloride and to optimize the drug release profile.

Metformin hydrochloride (N, N-dimethylimidodicarbonimidic diamide hydrochloride) is a member of the biguanide class of oral antihyperglycemics and is not chemically or pharmacologically related to any other class of oral antihyperglycemic agents. Metformin hydrochloride is a white to off-white crystalline powder that is freely soluble in water and is practically insoluble in acetone, ether, and chloroform. Metformin hydrochloride extended-release tablet is designed for once-a-day oral administration using the swellable matrix coated with a permeable membrane technology. The tablet is similar in appearance to other film-coated oral administered tablets but it consists of a swellable active core formulation that is coated by a permeable membrane. The core formulation is composed primarily of drug with swellable matrix excipients. Upon ingestion, water is taken up through the membrane, which in turn causes swelling of the polymer in an active core which control the drug release from the membrane. The rate of drug delivery is totally depending on the degree of swelling of the control release polymer and membrane thickness.

The pharmacotechnological properties analysis of the test substance has shown that the substance has insufficient value of flowability, about what the angle of repose and highly dispersed particles of powder testifies also. Compressibility of substance is also not satisfactory. The wet granulation technology has utilized for tablets production taking into account the overdose of test substance in one tablet. Both the binder and film polymer plays major role for the sustained release of metformin. The developed tablets correspond to Ph. Eur., 7th edition, on all of indexes.