Glipizide is an oral hypoglycemic drug prescribed for type II diabetic patients. This work aims to use Hibiscus rosa-sinensis leaf mucilage for formulation of sustained release glipizide tablets. Mucilage was extracted from Hibiscus rosa-sinensis leaves using acetone. The extracted mucilage was dried and triturated to fine powder. Glipizide tablets were prepared by wet granulation using extracted mucilage in different proportions. The formulated tablets were subjected to various evaluations like weight variation, hardness, thickness, friability, appearance and in vitro drug release. Drug excipient compatibility study was conducted using FTIR. The physical evaluation tests of tablets were well within the accepted limit. Comparison of FTIR spectrum of pure drug and formulation confirmed that there was no chemical interaction. The Hibiscus rosa-sinensis leaf mucilage sustained the release of drug. However, further studies must be carried out to improve the potential of Hibiscus rosa-sinensis leaf mucilage as release retardant.