A concise comparative mini review between HPLC-UV and spectrophotometric analysis of gliptins in pharmaceutical formulations.

Ramzia Ibrahim ,Shereen Mowaka, Moataz S Hendy, Mohamed M Elmazar, Andrew H Hakeem, Ehab F Elkady, Mirna M Antoun, Mai M Shaalan, Sara A Abdel-Wahab, Mai M Elsemeiri, Nourhan K Abdelaziz, Alaa E Mohamed, Menna H Eltahawy, Asmaa M Rashid, Rola M Emam, Mahmoud M Youssef, Muhammad N El-Kattan, Marwa A Sayed, Ahmed M Kowider, Adly H Seha, Engy A Rabea, Rana M Yakout, Rolly H Faried, Bassam M Ayoub

Abstract

The ongoing development of anti-diabetic drugs brings a revolution in the treatment of diabetes mellitus. Dipeptidyl Peptidase-4 (DPP-4) inhibitors are considered a new class of oral anti-diabetic agents used in treatment of type 2 diabetes mellitus. Therefore, the necessity to explore and compare the existing analytical method used for estimation of such drugs either single or in combination is crucial. This review offers an overview of different HPLC-UV and spectrophotometric methods used for determination of DPP-4 inhibitors namely; sitagliptin, vildagliptin, saxagliptin, linaglitpin and alogliptin in a tabulated comparative way. In addition, the present work included stability indicating assays of the drugs and determination of their process related impurities. Spectrophotometric assays showed more facilitated, simple and cost effective methods than the reported chromatographic techniques. Furthermore, the reviewed spectrophotometric methods showed the advantages of low cost solvents, shorter analysis time and simple instrumentation instead of complex details implemented in the chromatographic method development. The developed comparative review should be of interest to the analysts in the area of drug control and can be used by quality control laboratories for the recently approved gliptin combinations.

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