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A simple UV spectrophotometric estimation of antiretroviral drug, Saquinavir

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Abstract

A UV spectroscopic technique was developed for the estimation of saquinavir using 20% methanol as solvent and blank. This UV method is modest, precise, specific and validated. The primary aim of this research work is to advance a modest, specific, sensitive spectrophotometric method for estimation of Saquinavir with good precision, reproducible, accurate and economic over other methods, routinely used in laboratory analysis. Saquinavir showed UV absorption spectra in 20% methanol. Using 20% methanol as a solvent/blank is established on norms; like the sensitivity, economy, and ease of standard preparation. The h_{max} of saquinavir in 20% methanol is found to be 240.5nm. The molar absorptivity of the drug was found to be 3.256x104 mol−1 cm−1 in 20% methanol. The linear regression equation Y=3.152x-0.3893 with a regression coefficient, R^2 was 0.9995 obtained at an absorbance maxima, 240.5 nm. This UV spectroscopic method was highly sensitive, yet very simple and highly dependable with good precision and exactness. The demonstrated method is also specific while assessing the drug. Hence, this method can be used for the regular estimation under UV spectrophotometer for determining saquinavir in pure samples and other pharmaceutical samples.

Keywords: *Saquinavir, UV, anti-retroviral, HIV-Drug*

Introduction

Saquinavir is an anti-retroviral drug, chemically known as (2S)-N-[(2S,3R)-4-[(3S)-3-(tert-butyl-carbamoyl)-decahydroisoquinolin-2-yl]-3-hydroxy-1 phenyl-butan-2-yl]-2-(quinolin-2ylformamido)butane diamide. Saquinavir is a protease inhibitor anti-HIV drug, inhibits both HIV-1 and HIV-2 proteases[1]. These enzymes cleave protein molecules into the smallest fragments. HIV protease is vital for both viral replication