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Development of a dissolution system and UV-determination method for Bisacodyl suppositories, followed with bio-equivalency evaluation of different commercial products

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Bisacodyl is a laxative drug, used in the treatment of constipation by stimulation of bowel movement. Usually, bisacodyl is prepared as tablets and suppositories. The British pharmacopeia 2013 has a specific monograph for bisacodyl suppository, but it still did not recommend any method for dissolution test of this product. In this presented work, a dissolution system for bisacodyl suppositories is explained which includes the using of basket apparatus with 75 rpm and 500 ml dissolution medium of phosphate buffer pH 7.5 with the addition of 0.1% sodium lauryl sulfate (SLS). The using of this suggested dissolution medium is complied with the general requirements of BP test for suppositories. Determination of the dissolved bisacodyl in dissolution medium was carried by UV-spectrophotometry which is practically more preferable due to its simplicity; however, the SLS interference might affect the efficiency of determination. Therefore, to overcome this problem, 20 ml of filtered dissolution medium was transferred to 25 ml volumetric flask and the volume completed with 0.1% barium chloride solution in 0.1 M HCl. On mixing, the SLS was precipitated and clear solution was obtained on filtration. The resulted solution show accurate absorbance at 264 nm comparing with standard solution. This developed method was validated by analysis of different dilutions of bisacodyl standard solutions which show straight line relationship with their UV-absorbencies. In addition, an HPLC method was applied on the same sample solutions and the results confirmed the obtained data of UV analysis. This method was also used for determination of bio-equivalency profiles of different commercial products of bisacodyl suppositories which compared with Safa pharmaceutical industry product (see figure).

Biography

Kahtan J Hasoon has obtained his BSc in Pharmaceutical Sciences from College of Pharmacy, Baghdad University. He obtained his MSc in Pharmaceutical Analysis from Herriot-Watt University, UK. He has been a Member of Academic Staff of Al-Mustansiriya University. Currently, he is a Lecturer in the Al-Rasheed University College, and working as a Technical Consultant in SAFA Pharmaceutical Industries Co., Al-Safa Group.

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