

QUANTITATIVE DETERMINATION METHODS OF PARACETAMOL IN COMPOUNDING PREPARATION

Khaled Omar Al Rifai, Burian G. O.

Scientific supervisor: associate professor Burian G. O.

National University of Pharmacy, Kharkiv, Ukraine

anna_chem@ukr.net

Introduction. There are many treatments for catarrhal diseases, most of which are based on the administration of anti-inflammatory and antipyretic drugs. Paracetamol (or acetaminophen) is a part of the class of drugs known as "aniline analgesics"; it is the only drug which is still in use today. For decades, this substance is part of many drugs taken for colds and viral diseases. Paracetamol is used as an analgesic and antipyretic, in the treatment of a wide variety of arthritic and rheumatic conditions involving musculoskeletal pain and in other painful disorders such as headache, dysmenorrhoea, myalgia and neuralgia.

Extemporal compounding in their arsenal contains a large number of formulations, which include acetaminophen, which can be made in appropriate dosage forms, suspensions, powders, capsules.

Many methods are available in literature for assay of paracetamol in diverse types of samples including pharmaceutical preparations. These methods are as diverse as a simple titrimetric method to HPLC and spectrophotometric methods. Owing to wide spread use of paracetamol in different kinds of pharmaceutical preparations, rapid and sensitive methods for the determination of paracetamol are being investigated.

Aim. The aim of our research is to develop in accordance with the requirements of SPU quality control methods paracetamol, which is part of extemporal LF in the form of capsules. A simple, sensitive, accurate UV absorption spectrophotometric method for routine assay of paracetamol dosage forms for determination of chemical and biological stability.

Materials and methods. Based on the studies, quantification of paracetamol capsules is recommended by absorption spectrophotometry in the UV region. As the solvent used 0.1 M sodium hydroxide test solution optical density measured at 257 nm wavelength. Calculation of the quantitative content was performed by standard and specific absorption rate, which are set independently.

Results and discussion. In the study of subordination solution Beer–Lambert–Bouguer law found that the direct relationship observed in solution concentration of the active ingredient of $1.5 \cdot 10^{-4}$ to $1.3 \cdot 10^{-3}$ g/ml at length wave 257 nm, specific absorption rate is from 838 to 717. Check the stability of the solution was carried out for 60 minutes. It was established that the analytical solution is stable for hours.

Conclusions. Thus, the results can be possible to use techniques developed by us to quantify paracetamol in dosage forms.