Abstract

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Title of Thesis:	Usage of flow through cell dissolution method for medical preparations with controlled release

Dissolution studies are a very effective tool for easy and efficient obtaining information about the behavior of medical preparations in the human body. For decades, it has been successfully used in the development of dosage forms as well as in quality control for batch quality control during routine production. *In vitro* dissolution testing has become even more important because the *in vitro/ in vivo* correlation is based on their results.

This diploma thesis presents the usage of flow through cell dissolution method for medical preparations with controlled release. This work describes both the specific description of the flow thorough cell method and the test methods specified in the Czech Pharmacopoeia which uses it. Next, follows a breakdown according to the dosage forms together with a description of the modification of the flow through methods. Since the flow through cell was originally designed for oral controlled release drug formulations, the most extensive part of the work is focused on this route of administration. In recent years, however, there has been an increase in parenteral medical preparations with controlled release, and therefore a part for this drug form of adminisration is also described. The next chapter is focused on the usage of flow through cell method for inhalation dosage forms.

Some of these methods are intended to be used only in research and development and may not be suitable for routine quality control. Despite the fact that these methods are not standard pharmacopoeial methods, they still have the potential to provide valuable information on the expected behavior of the active substance in vivo.