

Dissolution testing of herbal medicinal products – Viewpoint of the regulatory authority



PD Dr. Werner Knöss

Federal Institute for Drugs
and Medical Devices

Bonn, Germany

Herbal medicinal products – classification

immediate release
modified release
(prolonged, delayed release)

not standardised
standardised

Herbal medicinal products - dissolution testing (1)

Herbal medicinal products are produced in different dosage forms (problem: lipophilic)



Herbal medicinal products - dissolution testing (2)

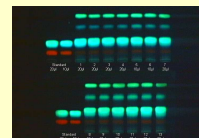
Informations from dissolution testing:

- reproducible quality !
- galenic development !

Herbal medicinal products are multi-component-mixtures

Informations from dissolution testing:

- resorption ?
- bioavailability ?
- bioequivalence ?
- biopharmaceutical characterisation ?



History of dissolution tests in pharmacopoeias

1970 USP

1986 German Pharmacopoeia (DAB 9)
„Wirkstofffreisetzung aus festen oralen
Arzneiformen“ (method description)

1995 European Pharmacopoeia (2. edition)
„Dissolution test for solid dosage forms“
(method description, further methods added
during the years)

2006 Acceptance criteria in Pharmacopoeia Eur.

Requirements on dissolution tests in guidelines

„F.I.P. Guidelines for dissolution testing of solid oral products“ :

dissolution limits given for rapid release and modified release formulations

„Note for guidance on specifications: test procedures and acceptance criteria for herbal drugs, herbal drug preparations and herbal medicinal products (CPMP/QWP/2820/00)“:

rapid release and not standardised – test for in-vitro active ingredient release can be omitted



harmonised regulatory requirements???

Acceptance criteria of dissolution rates

Ph. Eur.

limits: 50-85% within 30-60 min

mean: 75% within 45 min

F.I.P.

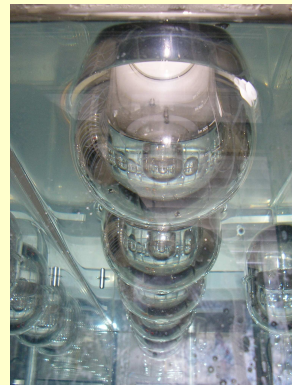
rapid release: >80% within 20-30 min

non-rapid release: 20-30% within 60-120 min

(final conc. > 80%)

Measurement of dissolution rates

- 3 data points
- 2 batches
- validation
- graphic presentation
- galenic development (additives up to 1%)



Herbal medicinal products - Relevance of dissolution tests

- **may be omitted (quite often)**
- **specific acceptance criteria**
- **careful interpretation of data**
- **assessment based on each individual marketing authorisation**