Online photostability study of pharmaceutical substances

Diego Zulkiewicz Gomes
Jaber Assaf
Thomas Schulze
Bernhard Wuest
Maria Kristina Parr

Slides apresentado
JAHRESTAGUNG DER DEUTSCHE GESELLSCHAFT FÜR MASSENSPEKTROMETRIE –
DGMS, 48., 2015, Wuppertal.
Poster.

A série “Comunicação Técnica” compreende trabalhos elaborados por técnicos do IPT, apresentados em eventos, publicados em revistas especializadas ou quando seu conteúdo apresentar relevância pública.
Online Photostability Study of Pharmaceutical Substances

A MS joint research between IPT-Brazil and FU-Berlin

Diego Zulkiewicz Gomes¹,2; Jaber Assaf¹; Thomas Schulze¹; Bernhard Wuest³; Maria Kristina Parr¹

Introduction:

The aim of this work is to evaluate the photostability of drug substances by using a modified HPLC, which consists of a tailored online photoreactor with back-flush and two column system. By this method, it is possible to obtain a straightforward answer on the degradation via photolysis of different substances in-vitro and to predict the photostability in early stage of drugs development. This may also help to reduce animal experiments in the future.

The most important consequence of photodegradation is the loss of potency of the product, but it can also generate unknown toxic products and free radicals that are known for its health adverse effects.

Target molecule: Ketoprofen

Methods:

Two columns system for on-line photostability experiments in solutions

Results and Discussion:

Irradiation of ketoprofen with UVA resulted in decreasing amounts of the target compound. First order kinetics was found as best model. Several photoproducts were detected after irradiation in aqueous solution (pH 7.0).

The photoproduct was determined by GC-MS which allowed better ionization when compared to ESI.

These data showed the potential for the use of the new device for fast and easy photostability studies.

References:


¹ Freie Universität Berlin
Institute of Pharmacy
Konigin-Luise-Straße 2-4
14195 Berlin
www.bcp.fu-berlin.de/pharmazie

² IPT - Institute for Technological Research
LAQ - chemical analysis Laboratory
www.ipt.br / diegozg@ipt.br

³ Agilent Technologies, Santa Clara