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Authors: Klara Dégardin, Aurélie Guillemain, Philippe Klespe, Florine Hindelang, Raphaël Zurbach, Yves Roggo



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Packaging analysis of counterfeit medicines

Dr. Klara Dégardin^{1*}, Aurélie Guillemain¹, Philippe Klespe¹, Florine Hindelang¹, Raphaël Zurbach¹, Dr. Yves Roggo¹

¹F. Hoffmann-La Roche Ltd., Bldg 250 Room 3.504.01, Wurmisweg, 4303 Kaiseraugst, Switzerland.

* corresponding author: tel.: +41/616888601, klara.degardin@roche.com

Highlights

- Authentication of the several components of a packaging of one medicinal product. 2. Several instruments like XRF and Raman spectrometers tested to support the visual examination.
- The results provide interesting data that could lead, with more samples, to forensic intelligence.

Abstract

The authentication of the packaging represents an important step in the investigation of suspected counterfeits of pharmaceutical products. The visual comparison with a retained sample is the first step to detect a counterfeited packaging. Due to the improvement of technologies like printing, the emergence of counterfeits with a better appearance can be observed. Moreover counterfeits are nowadays often a combination of fake and genuine parts that have been manipulated. Authenticating each part of the product is important in the frame of the investigation to understand how the counterfeiters proceed, and which prevention measures should be taken. Lab instruments like spectrometers can help confirm counterfeits of packaging for packaging components on which visually, no difference with a reference would be observed. In this study several analytical tools were evaluated to help support the authentication of the primary and secondary packaging of one medicinal product as an example using seven reference materials and five counterfeits. In some cases, visual examination of the packaging already enabled to detect counterfeits of the studied features. Also the boxes, leaflets and vials have been analysed with Infrared (IR)

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