

Keywords: *Keywords*

I

Abstract

Introduction

Lawson G, Ogwu J, Tanna S (2014) Counterfeit Tablet Investigations: Can ATR FT/IR Provide Rapid Targeted Quantitative Analyses? J Anal Bioanal Tech 5: 214 doi:[10.4172/2155-9872.1000214](https://doi.org/10.4172/2155-9872.1000214)

- Mode K-measures the peak intensity relative to the local

I : $I_{\text{peak}} / (I_{\text{peak}} + I_{\text{local}})$: I_{peak} is the peak intensity and I_{local} is the local intensity. The studied spectral range was 190-400 nm with a scan rate of 0.1 nm/s. The resolution was 4 nm. The instrument used was a spectrophotometer, Helios Gamma (Thermo Electron Corporation England). The studied spectral range was 190-400 nm with a scan rate of 0.1 nm/s. The resolution was 4 nm. The instrument used was a spectrophotometer, Helios Gamma (Thermo Electron Corporation England).

M

The study was conducted in a laboratory setting. The samples were prepared as follows: 0, 0.4, 0.8, 1.2, 1.6, 2.0, 2.4, 2.8, 3.2, 3.6, 4.0, 4.4, 4.8, 5.2, 5.6, 6.0, 6.4, 6.8, 7.2, 7.6, 8.0, 8.4, 8.8, 9.2, 9.6, 10.0. The samples were analyzed using ATR FT/IR. The results were compared with the reference spectra. The peak intensity was measured at 1715 cm⁻¹. The local intensity was measured at 1700 cm⁻¹. The K-measure was calculated as follows: $K = I_{\text{peak}} / (I_{\text{peak}} + I_{\text{local}})$. The results are shown in Table 1.

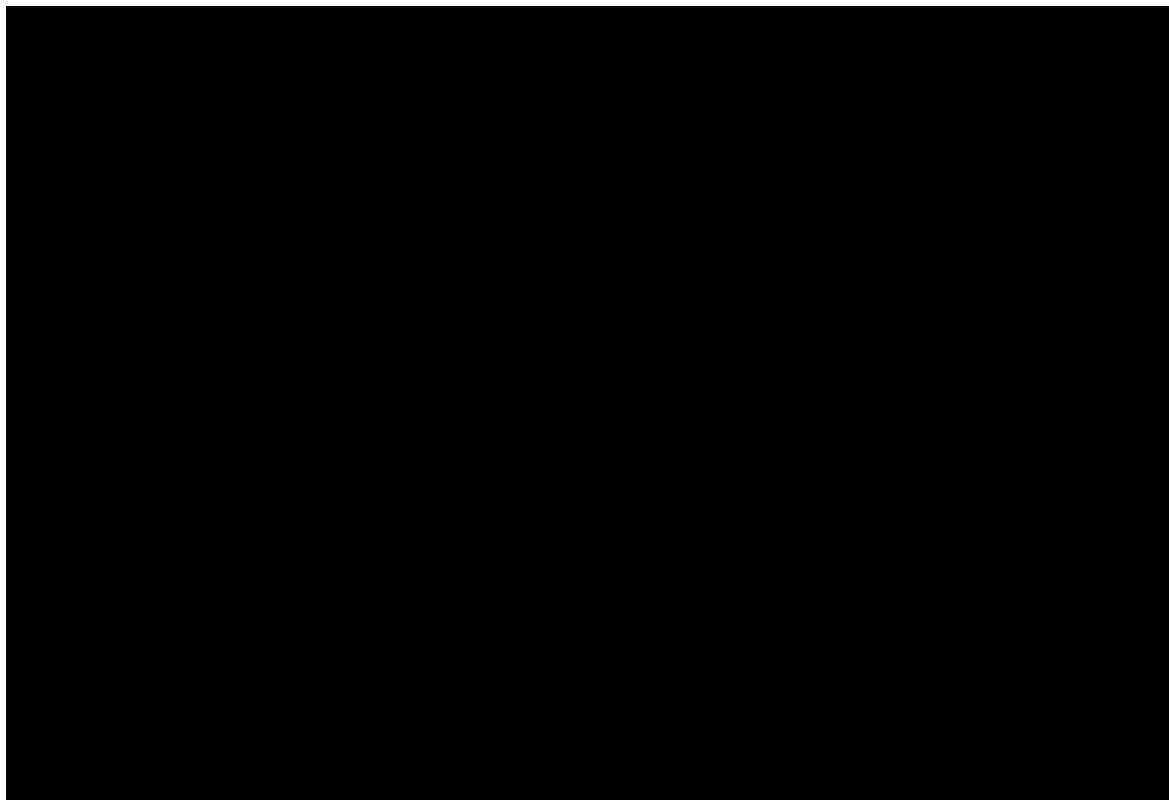
R

D

The results of the study are shown in Table 1. The K-measure values range from 0.00 to 1.00. The peak intensity values range from 0.00 to 1.00. The local intensity values range from 0.00 to 1.00. The K-measure values are calculated as follows: $K = I_{\text{peak}} / (I_{\text{peak}} + I_{\text{local}})$. The results are shown in Table 1.

F

The results of the study are shown in Table 1. The K-measure values range from 0.00 to 1.00. The peak intensity values range from 0.00 to 1.00. The local intensity values range from 0.00 to 1.00. The K-measure values are calculated as follows: $K = I_{\text{peak}} / (I_{\text{peak}} + I_{\text{local}})$. The results are shown in Table 1.



Overlay of pure paracetamol (Upper) and a paracetamol tablet sample. Tharfenac (Lower).

1. 0.001 1.000 (1100 cm⁻¹) 0.001 1.000 (1100 cm⁻¹)

Q
 0.001 1.000 (1100 cm⁻¹) 0.001 1.000 (1100 cm⁻¹)

$$y = 0.14x - 0.708 \quad (1225 \text{ cm}^{-1})$$

0.001 1.000 (1100 cm⁻¹)

$$y = 0.0887x - 0.5437 \quad (1225 \text{ cm}^{-1})$$

0.001 1.000 (1100 cm⁻¹)

Mode J

$$y = 0.0043x - 0.0211 \quad (1225 \text{ cm}^{-1})$$

$$0.001 + 0.001 \quad (1100 \text{ cm}^{-1})$$

$$y = 0.0018x - 0.0323 \quad (1225 \text{ cm}^{-1})$$

$$0.0011 - 0.001 \quad (1100 \text{ cm}^{-1})$$

0.001 + 0.001 (1100 cm⁻¹)

values around that expected for all the samples except for India 4#2 (1100 cm⁻¹).

J would therefore produce an incorrect high API level for this sample (1100 cm⁻¹).

1100 cm⁻¹

1 %
00



The authors thank Professor Larry Goodyer from the Leicester School of Pharmacy for kindly supplying paracetamol tablet samples from India. Thanks to the authors of Liege, CIRM, Laboratory of Analytical Chemistry, Leige, Belgium / Rwanda Biomedical Center/Medical Procurement and Production Division for the donation of the tablets from Africa (OYEM samples) and for discussions about the feasibility of using the simple ATR/FTIR method in Rwanda.

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