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Development of QR coded tablets for anti-counterfeiting of drugs by laser technology

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Counterfeit drugs pose a growing threat to our health as they can lead to hazardous treatment or even cause death. According to the WHO reports from 2017, the failure rate of these medical products is approximately 10.5% [1]. Drugs purchased on the Internet could be fake in 50% [2].

According to Directive 2011/62/EU to protect the pharmaceutical supply chain from substandard and falsified medicines, individual identification should be put on the packaging of prescription medicines. We are working on developing a unique traceable QR code placed on the surface of the tablet [3]. With this technology, even patients would be able to authenticate these drugs by a mobile phone with suitable application.

Coated tablets were marked by different types of lasers (YAG laser, excimer laser, semiconductor laser). Analytical quality control was carried out on the tablets to check if there occurred any change during the laser coding, by SEM, Raman, Thermogravimetry and Mass spectrometry.

It was found that some lasers with particular parameters are suitable for marking a unique code on tablets against counterfeiters, and others are not. Personalized medicines could also be labelled in this way.

References

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