The characteristics of scopoletin on to cigarette paper

Jun-Won Shin, Jeong-Min Lee, Un-Chul Lee, Moon-Young Lee,
Yong-Ha Kim, Hyo-Hwan Rah and Moon-Soo Rhee
KT&G Central Research Institute

Tobacco leaves compounds are transferred to cigarette paper by moisture, among of them some compounds exhibited blue fluorescence spots on to cigarette paper surface under UV-light. The purpose of this study was the identification and quantitative analysis of transferred materials on to cigarette paper. Especially, we focused the fluorescence materials analysis. The transferred compounds were extracted with distilled water using ultrasonic extraction. The fluorescence compounds were separated and purified from the extracted solution using column chromatography, filled with C_{18} Four polyphenol compounds, benzathiazole, salicyl alcohol, formyl nornicotine, 4-cumyl phenol, and scopoletin were identified by Gas chromatography / mass spectrometry (GC/MS) analysis. Among them, scopoletin had very strong fluorescence intensity at ex 342 ㎚/em 460 ㎚. The scopoletin transferred on to cigarette paper was quantified by HPLC equipped with a fluorescence detector, and fluorescence spectrum was measured by fluorescence spectrophotometer. From this study, we found that the scopoletin is major compound of fluorescence spots on to cigarette paper.