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1 **The forensic potential of comprehensive two-dimensional gas chromatography**

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12 **Keywords**

13 Forensic science, comprehensive two-dimensional gas chromatography, mass spectrometry,

14 GC×GC, GC×GC-MS, data analysis, review

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16 **Highlights**

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- 18 • The application, potential and limitations of GCxGC in forensic science was reviewed.
- 19 • A limited number of publications were found using GCxGC for forensic investigations.
- 20 • GCxGC data treatment and analysis for forensic comparison was described in detail.
- 21 • Application of chemometric methods on GCxGC data for forensic comparison was
- 22 reviewed.
- 23

24 **Abstract**

25 In this work the application of comprehensive two-dimensional gas chromatography in forensic

26 science is reviewed. The peer-reviewed publications on the forensic use of GC×GC and GC×GC-

27 MS have been studied in detail, not only to provide an overview, but also to analyze and

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