Minireview

Simultaneous Identification and Determination of Major Taxoids from Extracts of *Taxus chinensis* Cell Cultures

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Liquid chromatography electrospray ionization tandem mass spectrometry (LC/ESI-MS/MS) and high-performance liquid chromatography (HPLC) methods have been used to identify and quantify the major taxoids from extracts of *Taxus chinensis* cell cultures. Chromatography was carried out on a reverse phase C18 column with isocratic-mode elution. By analytically comparing LC/ESI-MS/MS of the extracts with that of the available reference substances and literature, six taxoids were identified as taxuyunnanine C (Tc, **1**), yunnanxane (**2**), 2α,5α10β-triacetoxy-14β-propionyloxytaxa-4(20),11-diene (**3**), 2α,5α,10β-triacetoxy-14β-(2-methyl)butyryloxytaxa-4(20),11-diene (**4**), taxol (**5**), and baccatin III (B III, **6**), respectively. Among them, **2**, **3** and **4** were assigned in the absence of the corresponding reference substances, and **3** and **4** were detected in this cell line for the first time. The identification was validated by NMR spectra. The precise quantification of **1** and **5** was made using HPLC. The limit of detection (LOD), 0.5 μg/ml for **5**, 1.5 μg/ml for **1**, and the linearity and accuracy of the quantitative method were evaluated, indicating a wide linear range and satisfactory accuracy. The amounts of other identified taxoids were calculated on the basis of comparison of the absolute response factors of similar structural substances. The proposed method provides a rapid, conventional and reliable tool to characterize and study cell lines for elucidating the taxane biosynthesis.

Key words: Taxoid Analysis, *Taxus chinensis* Cell Cultures, LC/ESI-MS/MS