

(I) 野生蜂與養殖蜂所產蜂蜜的糖類含量分析 (II) Indomethacin

光解產物的探討

(I) Sugars Content of Honey from Wild and Kept Honeybees (II) Studies on the Photodegradation Products of Indomethacin

中文摘要

本論文第一部分研究之目的在於以高效液相層析法就蜂蜜成分中最主要的糖類作分析，以比較野生與養殖所得之蜂蜜中之糖類含量，並將結果與波蘭、美國及加拿大等類似研究之分析結果相比較，發現一般養殖蜂蜜並沒有明顯的差異。結果顯示出一般養殖蜂蜜中約含 38 % 果糖，冬蜜約含 36% ，兩者十分相近，而野生蜂蜜則在 45% 左右。葡萄糖之含量除冬蜜約為 27% 外，一般養殖蜂蜜約為 33% ，野生蜂蜜則約為 31% 。因此在果糖與葡萄糖之比值上一般養殖蜂蜜均介於 1.1 與 1.2 間，而野生蜂蜜則約在 1.4–1.6 。只有少數蜂蜜能檢測出少量蔗糖，而麥芽糖含量均約在 4.2% 上下；因此總糖分含量冬蜜約為 67% ，一般養殖蜂蜜約 75% ，而野生蜂則高達 80% 。第二部分則是針對 Indomethacin 的光分解途徑作一初步的探討。由於 Indomethacin 在有機溶媒中的光解反應過去並沒有較明確的文獻報告，作者由光照後的 Indomethacin 氯仿溶液中以管柱層析法分離出一主要的光解產物，並經由核磁共振儀、紅外線光譜儀以及質譜儀等儀器的測定鑑別出此光解物的確實結構，並使用高效液相層析質譜儀及氣相層析質譜儀推出其他光解物之可能結構，發現 Indomethacin 在氯仿及甲醇中之光解反應主要為光氧化作用，且這些光解物在高溫下可能並不安定而會進行進一步的分解。

英文摘要

The purpose of the first part of this study was to analyze major sugar components of honey by high performance liquid chromatography (HPLC) method. Results, compared with data obtained from similar studies in Poland, the United States, and Canada, showed no obvious discrepancies. Results indicated that the fructose content in honey collected from kept honeybees was 38% ; in winter honey, 36% and from wild honeybees, 45 % . The glucose content in winter honey was 27%; in kept honey, 33 % ; and wild honey, 31%. Thus, the fructose- to-glucose ratios are between 1.1-1.2 in kept honey and 1.4-1.6 in wild honey. Only a small amount of sucrose was detectable in some samples, while

the content of maltose in all samples was around 4.2 %. The total sugar content in winter honey was 67%; honey produced in other seasons contained 75%, with wild honey up to 80 % . The second part, gives a preliminary study of photodegradation pathway of indomethacin. In the past, there seems no clear reports on photodegradation of indomethacin in organic solvents. The present author obtained a major photodegraded product from indomethacin in chloroform solution after exposure to sunshine by the column chromatography. Its structure was identified by means of NMR, IR and MS. Some information of others photodegraded products were also found. Generally, indomethacin proceeded a photooxydation reaction pathway in chloroform and methanol under sunshine. These photodegraded products seem unstable under high temperature and proceed to further complex degradation.