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• 中文關鍵字	L-3-羥基丁酸; 衍生化; 對掌性分離; 纖維素掌性管柱; 管柱切換之高效能液相層析儀; NBD-PZ 衍生化試劑		
• 英文關鍵字	L-3-Hydroxybutyrate; Derivatization; Enantiomeric separation; Cellulose-based chiral column; Column-switching HPLC; NBD-PZ		
• 中文摘要	3-羥基丁酸具有 D-與 L-型之鏡像異構物。動物體內之 D-3-羥基丁酸是較主要的代謝產物，而 L-3-羥基丁酸於哺乳動物中是否存在則仍有爭議。本研究建立一套分析系統，使用管柱切換之高效能液相層析儀，搭配螢光偵測法，以兩支串聯之掌性管柱 CHIRALCEL OD-RH 分析檢品中被 NBD-PZ 衍生化試劑衍生的 L-3-羥基丁酸，得到大白鼠血清中含有的 L-與 D-3-羥基丁酸的含量分別爲 3.98(3.61%)和 106.20 M (96.39%)。將此分析方法應用於大白鼠之心臟、肝臟及腎臟的分析，發現 L-3-羥基丁酸佔全 3-羥基丁酸的比例在心臟中最多(28.58%)。本研究所建立的方法可供進一步探討不同含量的 L-3-羥基丁酸在上述組織中所產生的影響。		
• 英文摘要	L-3-Hydroxybutyrate (L-3HB), the enantiomer of D-3-hydroxybutyrate (D-3HB), has traditionally been regarded as the unnatural ketone body in mammals, although there is suspicion that it is a more-favorable energy fuel for mammalian tissues compared to D-3HB. In the present study, we prove that L-3HB is an original substance in rat serum by applying fluorescence derivatization and a column-switching high-performance liquid chromatography (HPLC) system as the analysis technique. Racemic 3HB in rat serum derivatized using 4-nitro-7-piperazino-2,1,3-benzoxadiazole (NBD-PZ) was first separated by an ODS column, and was further confirmed by verifying the disappearance of the racemic 3HB peak after pretreating rat serum with D-3-hydroxybutyryl dehydrogenase (D-3HB dehydrogenase). A switching valve was used to simultaneously introduce isolated racemic 3HB to the enantiomeric separation by two CHIRALCEL OD-RH columns connected in tandem. An L-isomer was found to accompany the		

D-isomer, which were quantified to be 3.98 (3.61%) and 106.20 M (96.39%), respectively. Using the present analytical method, the dubious interpretation of the existence of L-3HB was clarified.