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• 中文關鍵字	體外體內相關性；體外溶離試驗；體內吸收；gliclazide
• 英文關鍵字	in vitro/in vivo correlation；in vitro dissolution；in vivo input；gliclazide
• 中文摘要	在本研究中藉由體外溶離試驗與體內血漿濃度之藥動學參數建立 gliclazide 之體外體內相關性。在本實驗中以羥丙烷基甲基纖維素 (Hydroxypropyl methylcellulose, HPMC) 與乳糖作爲調控藥物釋溶之賦形劑。採用直接打錠法壓製直徑 9 mm 的錠片，每顆錠片總重 240mg，內含 80mg gliclazide。首先建構不同 sodium lauryl sulfate 添加量對 gliclazide 於不同酸鹼值溶解度之影響曲線關係，依此共篩選出三種不同酸鹼值溶離溶液 (酸鹼值分別爲 1.2，4.5(+1%SLS)，及 6.8)，建立三種不同釋放速率處方之溶離曲線，以作爲建構體外體內相關性的體外溶離參數值。將這三種不同溶離速率處方在 18 名健康受試者以三相交叉設計進行生體可用率試驗，分別得到三個處方的體內藥物血漿濃度曲線，並計算包括 Cmax、Tmax、與 AUC(0-t) 等相關藥物動力學參數，以及利用 Wagner-Nelson 與 point-area deconvolution 分別計算體內吸收分率與吸收速率（input function），分別用於作爲建構 C 等級（level C）和 A 等級（level A）之體外體內相關性。結果顯示，結果顯示建構 C 等級的體內體外相關性可以選擇 Cmax 與在酸鹼值爲 6.8 之溶離液的溶離百分率，或是選擇 Tmax 與在酸鹼值爲 4.5 之溶離液的溶離百分率。而酸鹼值爲 6.8 的溶離液是建構 A 等級相關性的體外溶離條件之較佳選擇。由此所建立的相關性對於日後 Gliclazide 的處方修飾或是製程改變，將可提供體外溶離與體內血中濃度變化的參考依據，官方也可作爲判定是否需要進行生體相等性試驗之依據準則。
• 英文摘要	The purpose of this research project was to establish in vitro /in vivo correlation (IVIVC) of Gliclazide. Hydroxypropyl methylcellulose (HPMC) and lactose was used to formulate tablets with three different release rates. Direct compression method was

employed to prepare those tablets (9 mm in diameter and 240 mg in weight) containing 80mg gliclazid. In the first, the influence of various adding amount of sodium lauryl sulfate on the pH-solubility profiles of gliclazide was examined to select three dissolution media (pH=1.2, 4.5 (1% SLS), and 6.8) for characterization of the release rate for those three tablet formulations. It provides in vitro dissolution profiles for construction of in vitro-in vivo correlation. The three formulations were then ingested with 18 volunteers in a three-way cross over design to obtain plasma concentration profiles, from which the pharmacokinetic parameters (Cmax, Tmax, and AUC(0-t)) were deduced as in vivo parameters for constructing in vitro-ion vivo correlation of level C. Wagner-Nelson method and point-area deconvolutiom method were utilized to calculate fraction absorbed and input rate, respectively, to construct level A correlation. Results demonstrate that a level C correlation was established for Cmax with % dissolution in pH=6.8 dissolution medium, whereas for Tmax with those in pH=4.5 (1% SLS) dissolution medium. The best choice for constructing level A correlation was to conduct dissolution measurement in pH=6.8 dissolution medium. These constructed IVIV correlations could be used as a surrogate for formulation changes or process modifications of gliclazide. Preferably, authority also can do decision-making regarding whether bioequivalence study is needed based on these scientific data.