

# 台灣黑眶蟾蜍之親緣地理研究

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## 摘要

黑眶蟾蜍 (*Duttaphrynus melanostictus*) 現今廣泛分布於中國南部及東南亞，在台灣主要分布於五百公尺以下的闊葉林或開墾地。本研究於台灣採集到的地點分別來自不同縣市的 23 個族群，並利用粒線體 DNA 中 cytochrome b 和 control region 之間片段，長度為 982 bp。由 90 個定序樣本所得的序列發現有 23 個變異位置 (variable sites)，18 種單倍型 (haplotypes)，其中僅單倍型 Hp01 廣泛分布於台灣以及蘭嶼、綠島，並佔了所有序列的 46.7%。透過 Bayesian skyline plot 顯示台灣黑眶蟾蜍在末次冰期後族群量顯著地增加，推測是因氣候穩定所致。而基因多樣性與族群變動分析則顯示台灣僅有西部族群發生過族群擴張現象，推測是由少數之族群快速發展而來。經計算 Kimura-2-parameter 基因距離後再以 neighbor-joining 及 maximum-parsimony 方法重建單倍型間之樹狀圖後發現所取樣的黑眶蟾蜍序列與採集地點間沒有明顯的親緣分化現象，但在每個地區或鄰近地區 (除了雲林以外) 都發現當地特有之單倍型。經由分析親緣網狀圖推測黑眶蟾蜍進入台灣地區可能有兩條播遷路徑：1. 由台灣中部地區進入，並向東散播，隨後才向南拓殖，最後才往北擴散 2. 從台灣南部地區進入，並先後向北與向南散播，其次才向東擴散，最後又由宜蘭播遷回大陸。由於目前所得之研究資料僅得福建地區部分族群，若欲進一步推斷台灣之黑眶蟾蜍應是否至少有兩次遷入現象，尚須大陸其他沿海地區樣本以進行更深入的探討。

關鍵詞：黑眶蟾蜍、親緣地理、中心散播假說、同宗效應假說、粒線體 DNA 分析

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