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• 計畫中文名稱	錳及銅鋅超氧化物歧化脢於再發性人類頭頸部鱗狀細胞癌之表現
• 計畫英文名稱	The Expression of Manganese-and Copper, Zinc-Superoxide Dismutase in the Recurrent Squamous Cell Carcinoma of Human Head and Neck
• 主管機關	--
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• 研究人員	賴銘堂 Lai, Ming-Tang
• 中文關鍵字	超氧歧化脢；腫瘤復發；頭頸部鱗狀上皮細胞癌；免疫組織化學
• 英文關鍵字	Superoxide dismutase (SOD)；Tumor recurrence；Head and neck squamous cell cancer；Immunohistochemistry
• 中文摘要	時下的研究認爲超氧化物自由基(Superoxide radical; Oz:O/sub 2//sup -/)與細胞之癌化及癌細胞之行爲表現可能有關；故於研究癌之發生、轉移、再發及防治機轉方面，Oz:O/sub 2//sup -/)及具消除 Oz:O/sub 2//sup -/)能力之超氧化物歧化脢(Superoxide dismutase; SOD)遂成爲受人矚目的課題之一。曾有文獻報告癌細胞內 SOD 之含量與癌細胞對放射線傷害之耐受性有關；且癌細胞內 MnSOD(Manganese SOD)之存在與否亦被發現可能與子宮頸癌之再發有關。然而癌細胞在 In vivo 的行爲表現與癌細胞內 SOD 含量及活性之詳細關係則至今未明。吾人初步之實體組織研究結果發現人類各類頭頸部鱗狀細胞癌原發病灶之癌細胞俱有極高含量的 CuZnSOD(Copper, zinc-SOD)及 MnSOD(國科會專題 NSC 88-2314-B-038-103)。檢測發生遠隔轉移及侵犯正常組織之人類頭頸部鱗狀細胞癌癌細胞間 SOD 含量，亦發現發生遠隔轉移及侵犯正常組織之人類各類頭頸部鱗狀細胞癌之癌細胞俱有極高含量的 CuZnSOD 及 MnSOD(國科會專題 NSC 88-2314-B-038-032)。本研究以高敏感度、高特異性免疫組織化學染色法進一步檢測經放射線治療後又再發之 16 件人類頭頸部鱗狀細胞癌癌細胞間內含之 SOD 活性與含量之表現，結果發現經放射線治療後又再發之 16 件人類頭頸部鱗狀細胞癌均可檢測出強烈的 CuZnSOD 及 MnSOD 陽性染色。人類頭頸部鱗狀細胞癌不因放射線治療而喪失其高含量的 CuZnSOD 及 MnSOD 之特點，除顯示鱗狀癌細胞於放射線治療後又再發生之時仍具強力消除 Oz:O/sub 2//sup -/之能力之外，亦意味放射線治療後又再發之人類頭頸部鱗狀細胞癌保有與原發病灶之鱗狀癌細胞相似的強烈 CuZnSOD 及 MnSOD 陽性染色之表現特性。本研究結果對考慮以改變鱗狀細胞癌癌細胞或宿主組織細胞內之 SOD 活性或含量，以輔助鱗狀細胞癌之治療方面將可提供另一個新的思考方向。
• 英文摘要	Recent studies revealed that superoxide radicals (Oz:O/sub 2//sup -/) are possibly impliated in the carcinogenesis and bioactivity of carcinoma cells.

Studies on Oz:O/sub 2//sup -/ and superoxide dismutase (SOD), which can catalyze the dismutation of Oz:O/sub 2//sup -/, are thus considered to be important in revealing the possible implication of Oz:O/sub 2//sup -/ and SOD in the mechanism of occurrence, metastasis, recurrence and management of carcinoma. It has been reported that SOD may play a role in protecting cancer cells from rediation injury. Cervical cancer cells with manganese-SOD expression even showed significantly higher incidence of local recurrence than those without. Our preliminary studies (NSC 88-2314-B-038-103) revealed that human squamous carcinoma cells in original foci possess high levels of SOD. Metastatic squamous carcinoma cells and squamous carcinoma cells invading the normal tissues possess similar high levels of MnSOD as the squamous carcinoma cells in original foci do (NSC 88-2314-B-038-032). In this study, sixteen specimens of recurrent squamous cell carcinoma of human head and neck were used for detecting the SOD levels by immunohistochemical method. The results showed that recurrent squamous cell carcinoma of human head and neck possess similar high levels of SOD as the squamous carcinoma cells in original foci do. The high levels of SOD in recurrent squamous carcinoma cells implicate the higher ability of recurrent squamous carcinoma cells in scanvanging the Oz:O/sub 2//sup -/. and that recurrent squamous carcinoma cells possess similar high SOD levels as squamous carcinoma cells in original foci do. The results also provide new aspects on considering the management of squamous cell carcinoma by changing the SOD levels in carcinoma cells or in host tissue cells.