系統編號	RN9705-1031
• 計畫中文名稱	Apel/ref-1, Hhypoxia-Inducible Factor-1 Alpha 與 CEACAM-1 在睪丸生殖細胞腫瘤分化上表現之探討
• 計畫英文名稱	Expression of Ape1/ref-1, Hypoxia-Inducible Factor-1 Alpha and CEACAM-1 in Differentiation of Testicluar Germ Cell Tumors
• 主管機關	行政院國家科學委員會
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• 英文摘要	Germ cell tumor (GCT) is the most common solid malignancy affecting males between the ages of 15 and 35 years, accounted for 11.4% of all cancer deaths in men ages 25-34 years. Approximately 95% of GCTs occur in the gonads, and the rest occur in extragonadal tissues. Multiple types of adult testicular germ cell tumors exist, and each type differs in its degree of differentiation. GCT is a morphologically distinct group of neoplasm with varied clinical presentation. Ninety-five percent of tumors arising in the testes are GCTs, indicating that they originate from the primordial germ cells. Most of the GCT diagnosed early are cured. A delay in diagnosis correlates with a higher stage at presentation and, consequently, a lower cure rate. Although some success in treating GCTs in the past 2 decades archives due to largely of the effectiveness of cisplatin-containing combination chemotherapy in curing advanced disease. However, for those 20–30% of patients with extragonadal primaries or relapsed／refractory disease, the response to therapy is poor, with only 3-30% surviving disease free after second-line agents. From clinical standpoint, tumors of the testis are segregated into two broad categories: seminoma and non-seminomatous germ cell tumors (NSGCT). These NSGCT includes some differentiated forms, embryonic carcinoma, teratoma, yolk sac tumor and choriocarcinoma. NSGCT are thought to have a clonal origin and to recapitulate embryonogenesis, their pattern of differentiation being directed toward their pattern of differentiation being directed toward the formation of one or more of the components of the embryo and／or related structures. The specific directions of differentiation take will determinate the morphologic changes. Seminoma and NSGCT not only present with somewhat distinctive clinical and

morphologic features, but they also differ with respect to therapy and prognosis. Seminoma tends to remain localized to the testis for a long time; approximately 70% present in clinical stage I. In contrast, approximately 60% of patients with NSGCT present with advanced clinical disease (stage II and III). Metastases from seminoma typically involve lymph nodes. Hematogenous spread occurs later in the course of dissemination, NSGCT not only metastasize earlier but also use the hematogenous route more frequently. Seminomas are extremely radiosensitive, and radiotherapy unequivocally has to be regarded as standard therapy in stage I and IIA／B testicular seminoma. Where NSGCT are relatively radioresistant and most of the NSGCT do not response to radiotherapy. Radiation plays an important role in the treatment of cancer. Although modern technology has made it an effective tool, dose-limiting normal tissue toxicities and radioresistant tumors still lead to life-threatening radiation treatment failures. In order to improve its therapeutic ratio, there has been much interest in augmenting the effect of radiation on tumors by combining it with molecularly targeted tumor therapeutics. The mechanism of radioresistance of NSGCT is largely unknown. Some reports describe the elevated Apurinic／apyrimidinic endonuclease／redox effector factor (Apel／ref-1) levels observed in testicular tumor may be related to their relative resistance to therapy and may serve as diagnostic markers of refractory disease.