

H2**Effect of Carboplatin in Combination with Hyperthermia on Cell Death in Human Retinoblastoma Cell Lines**

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We have investigated the effect of environmental acidity on the induction of apoptosis caused by heat and carboplatin alone or combined. The degree of apoptosis after heating at 42.5°C for 1h in pH 6.6 medium was greater than that in pH 7.5 medium in WERI human retinoblastoma cells. When heated in the same pH medium, more apoptosis occurred in the WERI cells than in the Y79 human retinoblastoma cells. The decline in cell viability caused by hyperthermia at 42.5°C for 1h was greater than that caused by 50 μM of carboplatin in pH 6.6 medium but not in pH 7.5 medium. The cell death caused by the combination of carboplatin and hyperthermia was greater than that by either treatment alone regardless of the environmental pH. It was concluded that an acidic environment does not enhance carboplatin-induced cell death but it enhances the heat-induced cell death. It was also observed that p53 is not involved in the hyperthermia-induced apoptosis. Release of mitochondrial cytochrome C and caspase(s) activation by heat and carboplatin treatment are being investigated. (This work is done by KOSEF 1999-2-208-003-3 and Atomic Basic Research Fund 1999.)