COMPLETED

ORIGINAL

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USE OF THE NEUTRAL RED CYTOTOXICITY ASSAY TO DETERMINE THE CYTOTOXIC POTENTIAL OF WHOLE SMOKE FROM SIX LIGHT CIGARETTES

OBJECTIVE:

The neutral red cytotoxicity assay was utilized to compare the cytotoxic effects of mainstream whole smoke from six light cigarettes in support of Project EW. This assay was performed by using the CSET (cellular smoke exposure technology) method on CHO (Chinese Hamster Ovary) cells. A brief description of the six light cigarettes and the key results follow (detailed description in Table I):

	EC_{50} [1]
Marlboro Lt. 85	6.3
CS/CT-25	10.1*
Winston Select Lt. 85	5.7
Lark Lt. 85	6.4
CS/CLT	8.7*
CT-25	5.1

[1] Concentration of mainstream smoke (cigarette/cubic meter of air) to cause 50% reduction in growth of cell population.
*Indicates significant difference from non-asterisk cigarettes at $p \leq 0.05$.

SUMMARY:

Cytotoxicity testing on the whole smoke of the six cigarettes was done *in vitro* by using the neutral red assay. CHO cells were exposed to whole smoke by CSET and EC_{50} values were calculated from the dose-response curves by probit regression analysis. The statistical analysis of the EC_{50} values for the mainstream smoke from the six light cigarettes shows a significant difference between the CS/CT-25 cigarette and the other cigarettes, except the CS/CLT cigarette. The CS/CT-25 and CS/CLT cigarettes both contained the CS filter and exhibited EC_{50}'s for cytotoxicity that were not statistically different from each other.

KEYWORDS:

neutral red, cytotoxicity, Chinese Hamster Ovary cells, CHO, CSET, Project EW

STATUS:

This project is complete.