

immunity against the tumour parental cell. We investigated by RIA the expression of the MHC class I and class II antigens on these variants and the modulation of this expression by agents of differentiation such as DMSO and IFN. Our results suggested that enhancement of immunogenicity was not merely due to the presence of allogeneic class I antigens, since they are expressed at a low level on all variants. For tumour syngeneic class I antigens, a threshold of expression seems to be necessary but not sufficient to induce enhancement of immunogenicity. Class II molecules were not expressed even after treatment with DMSO and IFN. Rather, it seems that differential modulation of H-2D and H-2K, induced by some agents of differentiation, could be occurring during the development of the immune response.

#### INHIBITORY EFFECTS OF ELLAGIC ACID ON GENOTOXICITY INDUCED BY N-NITROSO COMPOUNDS

T.Gorski, E.Gorska, J.Odlanicki, D.Gorecka and M.Sikora

Department for Cancer Prophylaxis and Education of Sanitary Epidemiological Station, Lodz, Poland

It has been reported that ellagic acid - a naturally occurring plant phenol - inhibits the mutagenicity and carcinogenicity of benzo(a)pyrene. We tried to study the inhibitory influence of ellagic acid on genotoxicity induced by N-nitrosodimethylamine (NDMA) and N-methyl-N-nitro-N-nitrosoguanidine (MNNG). The methods were: in vivo - in vitro DNA alkaline assay (DNA Damage), Ames test on S.typhimurium strains (TA 1538 and Ta 100) and sister chromatid exchange (SCE) method. Dimethyl sulphoxide was used for compound dissolution and as a negative control. Data from all experiments demonstrate that ellagic acid distinctly inhibits the genotoxicity induced by N-nitroso compounds especially before the giving of the genotoxicants.

The following results showing the inhibitory effects of ellagic acid were obtained:

DNA-Damage	- from 59% to 39%
SCE	- from 0.040 to 0.024
Ames revertants/plate	- from 2500 to 36

#### PATTERNS OF ADA, 5'NT, POLY(A)POLYMERASE AND SURFACE LIGHT CHAIN EXPRESSION IN CLL

A.Gounaris(1), T.Trangas(1), N.Courtis(1), D.Koldinopoulos(1), S.Perez(1), G.Kafetzidakis(1), G.A.Pangalis(2) and C.M.Tsiapalis(1)

(1)"Papanikolaou" Research Center, 171 Alexandras Ave., and (2) Medical School, University of Athens, 115 22 Athens, Greece

Investigation of enzymes and immunological markers contribute to the definition of subsets of lymphoid malignancies and the prognosis of the disease. The pattern of distribution of the activity levels of adenosine deaminase (ADA), ecto-5'-nucleotidase (5'NT) and poly(A)-polymerase as well as that of the expression of surface light Ig chains was studied in 47 CLL cases. ADA activity was found to have a positive correlation with poly(A)-polymerase activity ( $r=0.345$ ). Increased values of the latter enzyme, which is responsible for the polyadenylation of mRNA, are associated with aggressive disease. Correlation of enzymatic activities with the surface light chain phenotype revealed the association of "λ type" leukaemias - considered to be more aggressive compared to those of "κ type" - with low 5'NT activities ( $p<0.01$ ). We conclude that the analysis of surface markers and enzymatic patterns of malignant cells may contribute to more accurate classification and monitoring of neoplasias.

#### PROTECTION BY N-ACETYLCYSTEINE (NAC) AGAINST ADVERSE EFFECTS CAUSED BY CIGARETTE SMOKE (CS) IN CULTURED HUMAN BRONCHIAL CELLS

R.C.Grafström, K.Sundqvist, J.M.Dybbukt, S.J.Stemme, P.Modéus and L.Nilsson

Karolinska Institutet, Stockholm, Sweden

The effects of CS and several cigarette smoke condensate fractions were investigated in human bronchial epithelial cells cultured in serum-free conditions. Cellular survival was decreased to 50% by 0.4 ml CS per ml of thiol-free growth medium. Supplementation with NAC up to 100 μM had a dose-dependent protective action against CS-induced loss of survival. Other effects caused by CS in bronchial cells include depletion of cellular thiols and formation of DNA single strand breaks. When cellular effects of smoke condensate, a semi-volatile and a non-volatile fraction were compared total condensate was the most cytotoxic, whereas the semi-volatile fraction was the most potent to decrease cellular thiols. Further fractionation of the semi-volatile fraction indicated that a neutral subfraction was more potent than the basic, acidic or phenolic subfractions in causing cytopathic effects. Concomitant exposure to NAC significantly protected against condensate-induced effects on survival, growth rate, thiol content and DNA