cells with a single nucleus but not multinucleated or giant cells were determined. The DNA content and nucleus area showed a time dependent change 10 to 18 days after transplantation with hypotetra-to octaploidal pattern. The increasing DNA content and the behaviour of aneuploidy has been suggested as the result of endoreduplication or nuclear fusion in the environment of host defense.

IMMUNOMODULATING EFFECT OF COPOLYMERS OF METACRYLIC ACID

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The immunomodulatory effect of six copolymers of metacrylic acid (MA) were investigated in $BD2F_1$ mice. The copolymer of MA with acrylamide (MAA) was selected for further investigation. MAA applied i.p. was able to enhance (as compared to the control) by 147% the plaque-forming cell response, by 100% rosette-forming cells response, by 142% the delayed type hypersensitivity reaction, as well as 10 times the NK activity of spleen cells. Suppression of humoral immune response induced by some bacteria could be reduced by MAA pretreatments. In L1210 leukaemia-bearing mice MAA exhibited some synergistic therapeutic effect when combined with BCNU.

EFFECTS OF BETEL EXTRACT AND RELATED COMPOUNDS IN CULTURED HUMAN BUCCAL CELLS

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Effects of aqueous betel nut extract and several betel-specific alkaloids and N-nitroso compounds were investigated in cultured human buccal epithelial cells and fibroblasts. The extract decreased both colony forming efficiency and clonal growth rate of epithelial cells to less than 50% at 10 µg/ml. Exposure to higher concentrations also caused both dose-dependent depletion of thiols and formation of DNA single strand breaks. Of eight betel nut-associated compounds investigated, 3-(methyl-nitrosamino)propionaldehyde was the most potent on a molar basis and significantly decreased both cellular survival and thiol content and also caused DNA damage in buccal cells between 0.1 and 0.3 mM. More than 10-fold higher concentrations of arecoline, guvacoline or N-nitrosoguvacoline were required to cause similar effects. Arecaidine, guvacine, N-nitrosoguvacine or 3-(methylnitrosamino) propionitrile up to 6 mM did not affect the cells significantly. The induction of cyto- and genotoxic effects by extract and several betel nut-specific compounds may be of importance for understanding the relationship beteeen betel chewing and carcinogenesis in the human buccal epithelium.

POLY-L-LYSINE AS DIFFERENTIATION INDUCER IN FRIEND ERYTHROLEUKAEMIA: STUDIES IN VITRO AND IN VIVO

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The ability of the synthetic cationic polypeptide poly-L-lysine (PLL) to induce differentiation was examined in Friend murine erythroleukaemia cells. Like other membrane-interacting agents, PLLs of different molecular weights were found to be good inducers of differentiation. These polymers enhanced differentiation produced by suboptimal concentrations of dimethylsulphoxide (DMSO). Since PPL was inactive as an initiator of maturation of DMSO-resistant cells, it is likely that some events (presumably membrane-related effects) involved in the multistep stimulation process are common to polar-planar solvents and to this polycationic polymer. A PLL of 2,700 MW was selected to examine the induction of differentiation process in animals bearing Friend erythroleukaemia. Although no increase in the survival was observed, the pattern of differentiation in erythro- and granulocytopoietic series in the myelograms of treated animals showed evidence of some cell maturation.

HUMAN PAPILLOMAVIRUS (HPV) INFECTIONS AND CERVICAL SQUAMOUS CELL CANCER

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Current data implicating the role of HPV in squamous cell carcinogenesis of the uterine cervix can be summarized as follows: (1)cervical HPV infections are a sexually transmitted disease (STD), shown to represent an increased risk for cervical