more than 1100 locations all over Finland. Cancer incidence rates dating back to the year 1953 were produced by municipalities (mean population 10,000). As a first step both geochemical data and cancer incidence data were illustrated as maps showing the areas with high and low concentrations and rates in 10-colour scale. On the basis of the hypotheses generated by visual observation of the maps or those known from the literature, a statistical multivariate analysis will be conducted by taking into account the known associations discovered in earlier analyses by the Finnish Cancer Registry between different background variables characterizing the municipalities (industrial structure, social welfare, living conditions, latitude, etc.), and individual cancer forms.

DNA-PROTEIN CROSS-LINKING BY CYTOTOXIC DRUGS

L.J.E.Pusey

Department of Biochemistry, University of Leeds, Leeds LS2 9JT

Analysis of DNA and DNA-protein by buoyant density centrifugation and electrophoresis of fractions revealed that exposure of SV40 transformed mouse BALB/c fibroblasts to the alkylating agent nitrogen mustard reduced the amount of DNA that banded in an isopycnic caesium chloride (CsCl) gradient and resulted in a greater proportion of DNA sedimenting at lower densities. Analysis of the drug treated and untreated DNA purified from the CsCl gradient revealed trace amounts of protein of molecular weight 20 to 25K (detected by silver staining) associated with the nitrogen mustard treated DNA.

These findings were correlated with cytotoxicity (as assayed by colony-formation assays and radiolabelled thymidine incorporation into DNA) and the studies are being extended to novel platinum-containing agents.

SEARCHING FOR NEW ONCOGENES AT THE JUNCTIONS OF TUMOUR SPECIFIC CHROMOSOMAL ABNORMALITIES

T.H.Rabbitts, R.Baer, L.Bulawels and L.Mengle-Gaw

Medical Research Council, Hills Road, Cambridge, CB2 2QH, U.K.

Chromosomal abnormalities which appear to be tumour specific may be involved in aetiology of the malignant cells. Abnormalities involving chromosome bands 14q11 and 14q32 are frequently observed in human tumours as rearranging genes (T cell receptor α chain and immunoglobulin heavy chain genes respectively) exist at these positions; this appears to enhance these interchromosomal exchanges. We have examined a number of different abnormalities involving 14q11 or q32 in an attempt to define new oncogenes by their occurrence at the junction of the abnormality and by the ability to detect mRNA transcripts from these genes. The nature of such transcripts has been investigated.

INTRACEREBRALLY IMPLANTED MAMMARY CARCINOMA CURED WITH ACETAMIDO-CNU AND HECNU

M.Radačić, Z.Krajina, D.Šimić, M.Boranić, I.Bašić(1) and G.Eisenbrand(2)

(1)Ruder Bošković Institute, University of Zagreb, Yugoslavia; and (2)University of Kaiserslautern, F.R.G.

A mouse mammary carcinoma (MCa) implanted intraperitoneally (i.p.), intravenously and intramuscularly can be cured with acetamido-CNU and hydroxyethyl-chloroethyl-nitrosourea (HECNU) (Radacic et al, Chemoterapia 2: 455, 1983). Further, we have studied the sensitivity of intracerebrally implanted MCa to those drugs. Animals were inoculated with different numbers of tumour cells ranging from 10^6 to 10^3 given in 0.05 ml (in one group, 0.1 ml). One day later, animals were treated i.p. with acetamido-CNU (15 mg/kg) or HECNU (20 mg/kg). The efficacy of the drugs was higher when the tumour cell inoculum was 0.05 ml than with 0.1 ml. Antitumour effects of acetamido-CNU were higher than the antitumour effects of HECNU. One-third of the animals inoculated with 10^5 tumour cells and treated with acetamido-CNU were cured, and all animals inoculated with 10^4 or 10^3 cells were cured. HECNU-treated animals were cured only when the inoculum was 10^3 cells or less.

TAQ I POLYMORPHIC ALLELES OF H-ras-1 PROTO-ONCOGENE PREFERENTIALLY ASSOCIATED WITH MALIGNANT MELANOMA

P.Radice, M.G.Borrello, M.R.Cattadori, P.Mondini, D.Rovini, M.T.Illeni, M.A.Pierotti and G.Della Porta

Istituto Nazionale Tumori, Milano, Italy

A polymorphism based on a variable number of repetitions in a region (VTR) of the human H-ras-1 proto-oncogene has been reported and used to define different classes of alleles that were designated as "common" and "rare". The latter have been found to be significantly associated with