ACTIVATION OF A CELLULAR ONCOGENE (C-MOS) BY DNA TRANSPOSITION.
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We have screened several mouse myeloma DNA for rearrangement of the oncogene c-mos. We found that XRPC-24 contains the normal gene and also a rearranged c-mos (termed rc-mos). This was the only tumour which also showed expression of mos mRNA. We cloned the c-mos and rc-mos in λ phage and found that the DNA of rc-mos, but not of c-mos, transformed NIH 3T3 cells in culture. The DNA sequence showed that rc-mos is identical to c-mos downstream from codon 78 but acquired a new DNA piece upstream to this position. The junction sequence is CAACA, typical to transposing element. The inserted sequence is highly homologous to the LTR of IAP (intracisternal A particle) gene. The LTR sequences join c-mos head to head (5' to 5') and presumably contain enhancing sequences which activate c-mos.

SISTER CHROMATID EXCHANGE INDUCTION IN FRIEND ERYTHROLEUKAEMIA CELLS STIMULATED OR NOT STIMULATED TO DIFFERENTIATE. R.Ricordy[1], G.Matarese[2], F.Palitti[1] and P.Perticone[1]. [1]Centro Genetica Evoluzionistica, Roma, Italy; [2]Laboratorio Virologia, Istitute Superiore di Sanità, Roma, Italy.

Several agents which are known to induce cellular differentiation may also induce sister chromatid exchanges (SCE). We have tested the effect on SCE frequency in Friend erythroleukaemia cells of both DMSO (an agent which induces differentiation) and 12-O-tetradecanoyl-phorbol-13-acetate (an inhibitor of differentiation) in this system. With both types of treatment an increase of SCE frequency was obtained. DMSO induction was higher than that found in the other cellular system. Furthermore mitomycin C which induced SCE in non-differentiating cells was not affected by TPA post-treatment suggesting that TPA action does not interfere with the mitomycin C mechanism of SCE induction.

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EFFECT OF SODIUM NITROPRUSSIDE (NP) ON THE INDUCTION OF LIVER TUMOURS BY DIETHYLAMINE HYDROCHLORIDE (DEA.HCl.) AND SODIUM NITRITE ($NaNO_2$)IN $C_{57}BL \times C_3H$ F_1 MICE. K.Rijhsinghani, C.Abrahams, M.Swerdlow and T.Ghose. Michael Rees Hospital and Dalhousie University, Chicago, U.S.A.

Nitroprusside functions as a nitrosating agent in vitro. We have investigated the effect of a single dose of NP on the induction of liver tumours by DEA.HCl and $NaNO_2$ in $C_{57}BL \times C_3H$ F_1 mice. Single doses of NP (1 or 2.5 μg/g), DEA.HCl (50 μg/g), $NaNO_2$ (50 μg/g) were administered intragastrically alone or in combination in infant mice (20-25/group). Mice were sacrificed at intervals up to 95 weeks. Whole liver was fixed and examined histologically.

NP alone did not increase the incidence of liver tumours compared to controls given distilled water only. However, tumour incidence was higher in mice given DEA.HCl + NP or $NaNO_2$ + NP than in mice given only DEA.HCl or $NaNO_2$. The group of mice that received all three agents DEA.HCl + $NaNO_2$ + NP did not develop more liver tumours than the group given DEA.HCl + $NaNO_2$. However, tumours began to appear earlier in the group given DEA.HCl + $NaNO_2$ + NP.

These results suggest additive effect of NP on the induction of liver tumours by DEA.HCl or $NaNO_2$ in mice.