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gated whether low-dose arsenite treatment (0.3 - 3 μM) could enhance the synthesis of the major HSPs as well as the levels of HSPmRNA. It was observed that under conditions of enhanced sensitivity, an extra increase of HSPmRNA and of HSP synthesis occurred when low concentrations of arsenite were applied to arsenite pre-treated cells. No effect of these low concentrations were observed in non-pretreated cells.

Enhanced development of tolerance was also observed under mild step-down conditions which correlated with increased levels of HSP68 and HSP84mRNA.

It appears that cells in pathological conditions are able to improve their recovery from stress damage on exposure to a low dose of the stressor.

Biological effects of low-dose radiation from a TV set on embryos and chicks

Study of a protective material

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The study was performed to evaluate the effects of radiation from a TV set on fertilized eggs and chicks for 47 days after hatching. The following parameters were assessed: plasma corticosterone level, body weight and specific humoral immune response after injection of an antigen. A protective material was tested according to these parameters.

TV treatment was given for 18 days at the embryonic phase and for 47 days after hatching. Eggs and chicks were placed at a distance of 0.5 m from the front of the TV set. X-rays and magnetic field intensity were measured. The protective material was TECNO AO antenna. It consists of a micro receptor-emitter which restores an ultra low intensity signal produced by the polarized liquid it contains.

The liquid has been engrammed electromagnetically at very high frequencies. The chicks were immunized using porcine thyroglobulin (Tg) injected subcutaneously. Plasma corticosterone and specific anti-Tg antibodies were determined. Anti-Tg IgG titres were defined as the reciprocal of the plasma dilution giving an absorbance equal to 1.

The results showed that radiation from the TV set had a powerful effect on the corticosterone levels induced by antigenic stress. Antibody levels showed the same variations. The group protected before hatching and irradiated after hatching presented the same hormonal and immunological changes as the irradiated group. A slight increase in antibody levels appeared only on day 47 when the chickens were adults. Interestingly, the antenna protected competitively against the effect of the TV set radiations on the hormonal and immunological disorders and the body weight of the chicks. Moreover, the improvement shown when using the protection material is correlated in the three parameters tested. Further experiments are necessary for a better understanding.

Preventive effects of a monoclonal anti-idiotypic antibody compared to a hormetic model on rat sarcomas

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A chemically induced malignant tumour model was obtained by subcutaneous (s.c.) administration of a single dose of benzo(a) pyrene [B(a)P] diluted in sesame oil. The results suggested possible relationships between carcinogen ligand/receptor interactions and PtdIns turnover.

To examine the possible vaccine effects of AIB1 Ab, this was administered to rats prior to carcinogen administration (tumour induction), another group was given B(a)P and the control group an equivalent volume of solvent. Eight days later, all SD female rats were given an s.c. injection of 2 mg of B(a)P diluted in sesame oil. Anti-PtdIns autoAb levels observed in AIB1 Ab-treated rats sera were around 70 % weaker than those observed in rats treated with 1 μg of B(a)P or control animals. No differences were noted in the profile curves between the control group and the group treated with 1 μg of B(a)P prior to the tumour-induction dose.

The results showed

—the capacity of a monoclonal anti-idiotypic Ab, internal image of a ligand involved in tumoral processes, to slow down tumour onset and growth, and to increase animal survival. We noted that whatever the period of AIB1 Ab treatment (preventive or curative), statistical tests showed significant mean survival mean differences between AIB1 Ab-treated groups and controls;[4]

—that in 25% of AIB1 Ab-treated animals, tumour growth was not observed;

—that the preventive effects of 1 μg of B(a)P injected prior to tumour induction are less