della sintesi proteica, che ad una alterazione nel trasferimento dei metili labili.

La metionina appare perciò, almeno indirettamente, un fattore indispensabile di accrescimento dei tessuti coltivati *in vitro*, che necessitano di un regolare rifornimento e disponibilità dell'aminoacido libero, onde provvedere al ricambio e alla sintesi di nuovo protoplasma.

A. Cestari, C. Rizzoli e M. A. Gliozzi

Istituto di Farmacologia e Terapia sperimentale e Istituto di Istologia e Fisiologia generale dell'Università di Bologna, 26 novembre 1957.

Summary

The administration of ethionin to tissue cultures of fibroblasts *in vitro* causes a rapid and total inhibition of the growth of the transplanted tissues.

It was observed that equimolar quantities of methionin are, on the contrary, well tolerated. The inhibition is therefore seen to be due to the dismetabolic activity of the antagonist.

The contemporary administration of cholin is not able to restore the growth capacity of ethionin inhibited tissue cultures.

In conclusion, ethionin produces a direct action on fibroblasts *in vitro*, probably intervening in the process of protein synthesis of the transplanted elements.

An Attempt to Transfer Tumor Protein Specificity to a Foreign Protein

In the present work, an attempt was made to obtain chicken antibodies possessing some combining groups characteristic of proteins of the Jensen sarcoma of the rat. The procedure was to obtain a rabbit antiserum to the Jensen sarcoma and then a chicken antiserum in response to injections of this rabbit antiserum. If the chicken antibodies contained combining groups similar to tumor proteins, then injection of these antibodies into rats might possibily offer a means for the host to produce its own antibodies against these tumor specific determinate groups. These modified chicken serum proteins would be expected to be antigenic in the rat whereas the tumor proteins themselves are apparently not antigenic. Such a system might allow a specific means of inhibiting tumor growth.

Materials and Methods.—Bits of the Jensen sarcoma were excised from rats, washed thoroughly in saline, homogenized, and a 5% suspension of this preparation was serially injected intravenously into rabbits on alternate days, in 0·5 ml, 1·0 ml, and 1·5 ml doses. Following a one week rest period, the rabbits were given a further injection of 1·0 ml of the antigen and 48 h later the serum was collected. This antiserum reacted with the antigen at an antiserum dilution of 1:1000. After absorption with normal rat serum, this antiserum still had a titer of 1:128 with the supernate of the Jensen sarcoma, but gave no reaction with normal rat liver, kidney or muscle supernates. The γ globulin fraction of the antiserum was collected by ammonium sulfate precipitation. After dialysis against physiological saline to remove ammonium sulfate, three intravenous injections of 2·0 ml each of the rabbit γ globulin fraction were administered to chickens on alternate days. The chicken serum which was collected 10 days after the last injection had an antiserum dilution titer of 1:512 when reacted against the rabbit γ globulin fraction. The diffusion gel technique described by Ouchterlony[1] was used to test for any similarity between the tumor antigen preparation and the chicken antiserum.

Results.—The soluble supernate of the tumor showed only one precipitate line for the reaction with the rabbit γ globulin fraction, while the chicken antiserum showed two precipitate lines for the reaction whith the rabbit γ globulin fraction. However, the precipitate lines from these two sets of reactions crossed and did not show the reaction of identity (Björklund[2]), thus indicating that the tumor antigen and the chicken antibodies did not share any similar combining groups.

Apparently the antibodies formed by the chicken in response to rabbit antibodies against the Jensen sarcoma are primarily directed against the rabbit serum protein, rather than to any of its combining groups which have a complimentary configuration to determinate groups of the proteins of the Jensen sarcoma. These results are somewhat similar to those of Smith and Marrack[3] with another serological system.

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D. E. Rounds and R. A. Flickinger

Department of Zoology, University of California, Los Angeles, January 1, 1958.

Résumé

L'essai de transférer la spécificité des protéines d'une tumeur à une protéine étrangère par un procédé sérologique, a donné un résultat négatif.

[1] Ö. Ouchterlony, Lancet *256*, 364 (1949).
[2] B. Björklund, Proc. Soc. exp. Biol. Med. *79*, 319 (1952).
[3] F. C. Smith and J. Marrack, Brit. J. exp. Path. *11*, 494 (1930).

Comportement nucléaire anormal dans la racine d'*Ornithogalum umbellatum* L.

Une étude générale portant sur les aspects cytologiques observables par suite d'altérations du matériel chromatique nous a conduit à prospecter, parmi les Liliacées, le genre *Ornithogalum*. Il est largement représenté en Alsace où cinq espèces ont été décrites. *Ornithogalum caudatum* Ait. cultivé en serre a également fait l'objet de notre étude et nous a montré des phénomènes d'agglutination au niveau des anthères, dans les cellules-mères. Sur *Ornithogalum umbellatum*, en station naturelle, nous avons vu l'agglutination dans les cellules-mères de pollen, et la recherche du nombre chromosomique a donné respectivement 43 et 46 unités, dans des plantes de même provenance (l'existence de nombres divers dans cette espèce est d'ailleurs connue)[1]. (Fig. 1.)

Après étalement de pointes de racines et coloration au carmin ferrique, nous avons observé un comportement

[1] J. de B. Neves, cité par C. D. Darlington et A. P. Wylie, *Chromosome Atlas of Flowering Plants* (Allen and Unwin Ltd., London 1955), p. 351.