

Comme nous l'avons exposé antérieurement¹ ces faits permettent de suivre expérimentalement le phénomène peu élucidé, mais très important au point de vue pathologie comparée de l'extériorisation dans un organisme sain, par suite de l'effet d'une substance chimique, d'une maladie due à un microorganisme transmissible et spécifique.

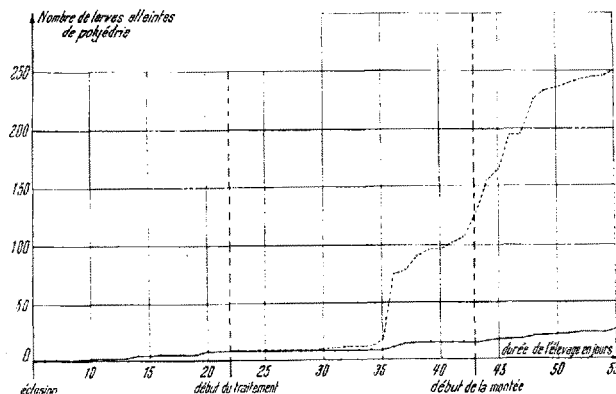


Fig. 2. Apparition de la polyédrie à la suite du traitement au FNa. — — — — lot traité. ————— lot témoin.

Le mode d'action du fluorure de sodium se traduisant par des troubles intratissulaires et intracellulaires peut être recherché dans un effet sur la respiration cellulaire. En effet, cette substance est susceptible de diminuer, voire d'arrêter le processus de la dégradation glucidique. Elle influe sur le début du catabolisme, au cours de la phase de phosphorylation, ainsi que sur le passage de l'acide phospho-3-glycérique à l'acide pyruvique. Cette dernière influence est liée à l'inhibition de l'énolase, enzyme déshydratant l'acide phospho-2-glycérique.

La façon dont les effets chimiques du fluorure de sodium se répercutent sur l'apparition de la virose, prolonge les recherches sur un autre plan. Les résultats de nos nombreux essais de déclenchement de la polyédrie ont montré qu'une apparition importante de cette dernière peut être obtenue en excluant toute infection externe, en faisant agir un grand nombre de facteurs aussi bien alimentaires, chimiques que climatiques ou liés aux conditions de l'incubation et de l'élevage. Parmi ceux-ci, nous précisons les suivants qui ont donné toujours un pourcentage de polyédrie dépassant 60%: l'alimentation avec *Machura aurantiaca* ou avec *Lactuca sativa* d'une part, les grands écarts de température réalisés en chambre climatisée dynamique, d'autre part.

Nous jugeons comme essentielle la considération de l'action du fluorure de sodium sous l'aspect et dans le cadre de cet ensemble de faits.

En effet, la nature très variée des facteurs aboutissant toujours à l'apparition d'un même type de maladie, nous amène à considérer l'existence d'un élément supportant la potentialité des propriétés du virus, élément latent qui se transformerait par complémentement en virus actif comme conséquence de l'effet de facteurs divers et multiples sur le système enzymatique cellulaire. Nous soulignons cette notion d'élément potentiel spécifique également à cause des rapports, par analogie, entre ce problème et celui de la genèse de certaines formations néoplasmiques, et viroses animales.

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I.N.R.A., Laboratoire de pathologie, Station de Recherches d'Alès (France), le 17 juillet 1953.

¹ C. VAGO, Rev. Canad. Biol. 10, 299 (1951).

Zusammenfassung

Borrelina-Virose wird in Larven von *Bombyx mori* nach Fütterung von 0,01% Natriumfluorid manifest. Das massenhafte Auftreten der Viren erfolgt trotz Ausschluss äusserer Infektion. Es wird eine Aktivierung von Elementen angenommen, die eine latente und spezielle Viruspotenz besitzen. Auf die enzymhemmende Wirkung des Natriumfluorids beim Gluzidabbau wird hingewiesen.

Specificity of Antibodies in Acquired Haemolytic Anaemia

Recently some reports have appeared on the specificity of the so-called autoantibodies. CRAWFORD, CUTBUSH, and MOLLISON¹ found the anti-H specificity in incomplete "cold"-antibodies. The specificity of auto-antibodies of the "warm" type has been reported by WEINER *et al.*², SANGER³ and DACIE⁴. The first two authors found an anti-e specificity in these antibodies, while DACIE reported a specificity which is common also to other Rh antigens. A blood sample of a 17-year old patient (W.B.) with acquired idiopathic haemolytic anaemia gave us an opportunity to study this question.

Serum, eluate and absorbed eluate tested against erythrocytes with known Rh genotypes

	cde/cde	CDe/cde	CDe/CDe
Serum	+	+	—
Eluate	+	+	+
Eluate absorbed by cde/cde erythrocytes	—	—	—
Eluate absorbed by CDe/CDe erythrocytes	+	+	—

cde/cde erythrocytes are listed as representatives of all the other types of erythrocytes carrying the c antigen in double dose (cc), CDe/cde erythrocytes as representatives of those carrying it in single dose (Cc).

+ and — refer to a positive or negative indirect antiglobulin test, respectively.

The erythrocytes of the patient gave a positive anti-globulin test up to dilutions of the antiglobulin serum of 1:256. Using the indirect antiglobulin test, free antibodies were demonstrated in the undiluted serum which, when tested against a large number of erythrocyte samples showed a negative reaction only with erythrocytes of the genotype CDe/CDe. (Unfortunately Cde/Cde erythrocytes were not available.) We therefore concluded that the antibodies in question might be of anti-c specificity. The patient possessed the c-antigen (CDe/cde) and he had never been transfused so any antibody formation due to administration of an incompatible Rh antigen is out of question.

The antibodies were eluted from the patient's red cells at 56°C in a waterbath. The eluate was tested

¹ HAL CRAWFORD, MARIE CUTBUSH, and P. L. MOLLISON, Lancet 1, 566 (1953).

² W. WEINER, D.A. BATTEY, T.E. CLEGHORN, F.G.W. MARSON, and M. J. MEYNELL, Brit. med. J. 2, 125 (1953).

³ RUTH SANGER, personal communication.

⁴ J. V. DACIE, Communication at the 4th Congress of the European Society of Hematology, Amsterdam 1953.

against the same samples of erythrocytes which had already been tested with the serum. Now the CDe/CDe erythrocytes also showed a positive reaction with the indirect antiglobulin test. From this finding we concluded that the antibodies coating the erythrocytes represent a mixture composed of (1) antibodies with anti-c specificity, and (2) real panantibodies. In order to confirm this assumption, absorption experiments were carried out. Their results, together with those of the investigations mentioned above, are summarized in the Table below.

The antibodies in the eluate are fully absorbed by cde/cde erythrocytes. Absorption by CDe/CDe erythrocytes removes the non-specific antibodies leaving the anti-c component, which incidentally did not show any dosage effect.

It ought to be considered whether the non-specific part of the antibodies might nonetheless exhibit a specificity. It would of course be difficult to demonstrate that the apparently non-specific antibody is not in fact specific for some blood group antigen of high frequency.

From the investigations reported, the following conclusions may be drawn:

- (1) The so-called autoantibodies in haemolytic anaemia may be separated by absorption procedures.
- (2) They may consist of a specific and a non-specific component: a specific component against a homologous blood group antigen, and a non-specific component with the character of a pan-antibody.
- (3) The antibody components may behave qualitatively (or even quantitatively) in a different manner. In the case here reported, the bloodgroup specific component is present both on the erythrocytes and in the serum, while the non-specific component is fixed to the erythrocytes only.

L. HOLLÄNDER

Blood Donor Centre of the Swiss Red Cross in Basle, October 22, 1953.

Zusammenfassung

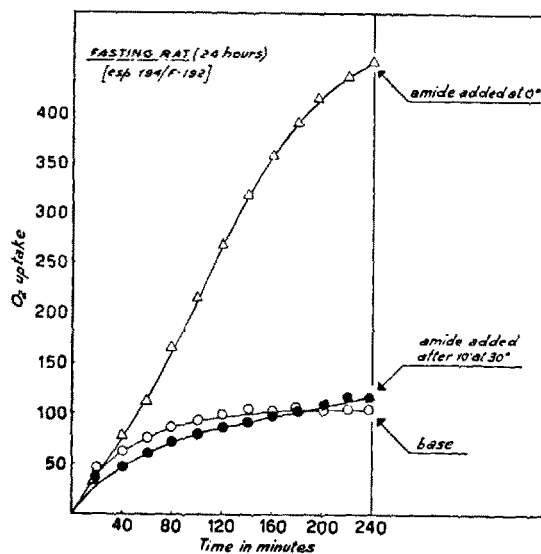
Die Autoantikörper bei der hämolytischen Anämie können durch Absorptionsverfahren aufgetrennt werden. Sie können aus einer spezifischen und einer unspezifischen Komponente bestehen. Die spezifische Komponente kann gegen ein homologes Blutgruppen-Antigen gerichtet sein. Die unspezifische Komponente hat den Charakter eines Pan-Antikörpers. Die Antikörper-Komponenten können sich qualitativ (eventuell auch quantitativ) verschiedentlich verhalten. Im vorliegenden Falle ist die blutgruppenspezifische Komponente sowohl an den Erythrozyten als auch im Serum vorhanden, die unspezifische Komponente nur an die Erythrozyten gebunden.

Action of Niacinamide on the O_2 Consumption by Homogenates of Rat Liver¹

The O_2 consumption by homogenates of rat livers was studied using a WARBURG conventional apparatus. The rats were fed on a mixed natural diet (bread, vegetables, and prepared feeds of a normal hospital diet). The livers were homogenized in RINGER solution, pH 7.4, for 1 min at 0°C. In the first series of experiments niacinamide (free from nicotinic acid and ammonium nicotinate) was added to the homogenates after standing 10 min at 30°, in the WARBURG bath apparatus, in a second series niacinamide was added to the homogenates when freshly prepared, at a temperature of 0°. The optimal quantities

of homogenate and niacinamide proved to be respectively 200 mg and 1×10^{-3} moles.

The mean values of 94 experiments carried out with the two different methods are presented in the Figure. It is seen that niacinamide, when added to the homogenate after 10 min in the bath at 30°, does not sensibly modify the O_2 consumption, during the first 240 min. The oxygen uptake rate under these experimental conditions was highly irregular. On the other hand, when niacinamide is added at 0° before the experiment is started, the O_2 consumption is markedly constantly enhanced.



When the mixture homogenate-niacinamide is previously kept at 50° for 40 min, its respiratory activity, as measured at 30° in a WARBURG apparatus, is completely abolished.

The mechanism of the activation, induced in respiration of liver homogenates by adding niacinamide at 0° before respiration is started, is in course of study. Some preliminary results are here reported, further research being still carried on.

The observed phenomenon is not modified by adding to the mixture homogenate-niacinamide substances that inhibit phosphorylation, such as 2,4-dinitrophenol and aureomycin. On the contrary, it is sensibly inhibited by α -tocopherol, and completely abolished by KCN.

These preliminary studies do not allow of determining the pathway through which the activation of the respiration takes place when niacinamide is added to the liver homogenates. However, it may be said that this reaction does not occur by utilizing ∞P ; but is carried on by the KCN-sensitive respiratory systems. The possibility that niacinamide acts independently of its nucleotidic form is considered.

On the basis of this preliminary work, further experiments are being carried out concerning the influence of various parameters on the above described phenomenon: e.g. diet, fasting, etc. in the experimental animal, and oxidizable substrate in the homogenate.

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Institute of Clinical General Medicine and Therapeutics, University of Milan, March 16, 1953.

Résumé

Les auteurs démontrent que l'addition d'amide nicotinique à un homogénat de foie de rat jeûnant depuis 24 h, provoque une augmentation de la respiration endogène.

¹ Communicated at the 2nd International Congress of Biochemistry, Paris, 21–27 July 1952.