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.

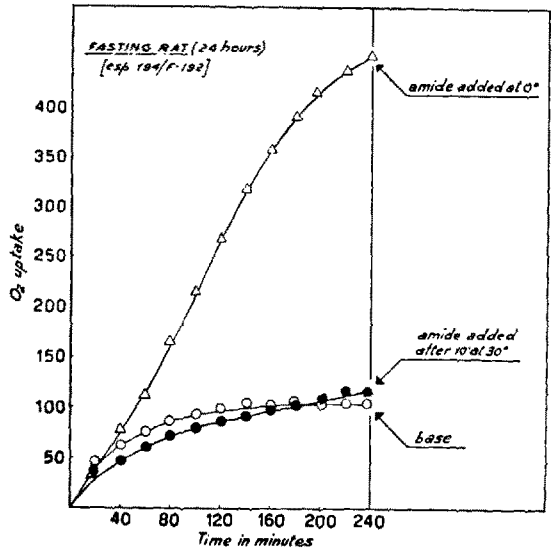
Zusammenfassung

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 Liver[1]

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 phosphorilation, 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-sensible 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.

L. VILLA and N. DIOGUARDI

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.