## Anti-N from *Moluccella laevis*

Anti-N agglutinins from the seeds of *Vicia graminea*[1], other *Viciae* and various *Bauhineae*[2,3] are known; of these, *Vicia graminea* anti-N is the most satisfactory. *Vicia graminea* is indigenous to South America; the seeds are therefore not readily available elsewhere.

We here report the finding of a good anti-N agglutinin along with anti-A in extracts of the seeds of *Moluccella laevis* (Bells of Ireland, Shell Flower, Molucca Balm) of the Natural Order, Labiatiae. The seeds are readily available from seed merchants in Britain and, we have no doubt, in other parts of Europe.

*Moluccella laevis* seeds, purchased from Thompson & Morgan Ltd., Ipswich, were extracted by the method of BOYD and REGUERA[4]. Fresh crude extracts were tested against freshly collected thrice-washed capillary specimens of human group B or O red cells suspended in isotonic saline solution (1 vol. of packed cells to 9 vol. of saline (10%) for tile tests, and to 24 vol. of saline (4%) for tube tests).

The agglutinin is relatively N-specific; appropriate dilution readily makes the extract N-specific. Specificity is quickly and clearly demonstrated either by avidity of agglutination on a tile or by conventional titration in tubes.

There are already indications that the *Moluccella* agglutinin makes a sharp quantitative estimate of N-antigen strength. Thus, the agglutinin promises to be of value as a research tool in the MN blood group system, in which 'dosing' reagents are of value in detecting variants of the M and N antigens.

As with the *Vicia graminea* anti-N, the action of anti-N on neuraminidase-treated NN or MN red cells is enhanced.

The *Moluccella laevis* agglutinin has been reported as non-specific by HOSSAINI[5]; this could be due to variation among strains of the plant or, more likely, to the fact that the tests were read after centrifugation.

Most specific seed agglutinins have been obtained from the genus *Leguminosae*. The *Moluccella laevis* agglutinin is the second specific agglutinin to be found in the genus *Labiatiae*, the first being the anti-A agglutinin of *Hyptis suaveolens*[6]. A wider search among seeds of this genus might be rewarding.

Further studies of the *Moluccella laevis* agglutinin are in progress and a complete report will appear elsewhere.

*Zusammenfassung.* In Samen von *Moluccella laevis* gelang der Nachweis von Anti-N-Agglutinin mit besonders starker Wirkung auf NN-Erythrozyten.

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*Regional Blood Transfusion Service, Birmingham 15 (England), 11 June 1969*

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## A New Method of Examining the Stimulatory Effect of *Serratia marcescens* Endotoxin on Non-Specific Resistance to Infection

Owing to the wide range of their biological activities, endotoxins prepared from Gram negative bacteria have been at the centre of interest for the recent decade. Several authors have reported increased resistance of endotoxin-treated experimental animals to various bacterial[1,2], viral[3,4] and fungal[5,6] infections.

But it has supposed to be a non-specific resistance-increasing effect whose mechanism has not yet been unequivocally clarified. The present paper is a report of studies on the mechanism of action of the increase of non-specific resistance to infection by endotoxin pre-treatment.

*Material and method.* The experiments were performed on randomized male Wistar rats weighing 100–150 g. Trypanosoma equiperdum strain maintained in this laboratory in mouse passages since 1942 was used for infection. This protozoon develops exclusively in the blood and has no intracellular stage and, being very small, can be readily counted in a Buerker counting chamber.

Male rats, 100–150 g, were given i.v. fresh infected blood obtained by cardiac punction, with the initial count adjusted to $2 \times 10^7$/ml. In the blood of the infected animals trypanosome counts were determined at 1 h intervals. The blood samples taken from the tail vein were diluted 200-fold with low heparin containing saline and the actively moving organisms were counted in a Buerker chamber. The limit of error of this method was $\pm 5\%$.

The endotoxin used in the experiments was extracted from *Serratia marcescens* with Boivin and Mesrobeanu's method. 1 ml of the preparation contained active substance from $4 \times 10^9$ germs. Its MLD for the rat was 0.5 ml/100 g. The animals were treated with rising doses of endotoxin on 6 occasions at 48 h intervals. The last dose, which was twofold of the MLD, caused no symptoms, indicating the development of endotoxin tolerance in the meantime. Intravenous infection with trypanosomes was carried out 48 h after the last endotoxin dose.

*Results and discussion.* Prior to the experiments the characteristic properties of the *Trypanosoma* strain were determined. The growth curves in control rats indicated an immediate logarithmic replication of the trypanosomes; thus in the control group the animals died at a trypanosome count of $2–2.5 \times 10^9$/ml blood. From the growth curves plotted out from trypanosome counts in 26 rats, the duplication time of trypanosomes was assessed as 5.5 h and the tangens alpha of the logarithmic phase as 0.0547[7].

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