

AGGLUTINATION OF LABELED RBC

In labeling red blood cells with ^{51}Cr -sodium chromate the usual precautions to be adhered to pertain to sterility in the procedure, purity of material used, and absence of pyrogenic substances. Toxicity of chromium above $25\ \mu\text{g}/\text{ml}$ of red blood cells is also warned against (1).

We wish to report a case illustrating another precaution which should be guarded against. The patient, a 51-year-old female with macroglobulinemia proven by ultracentrifugation and immunodiffusion was referred for blood volume determinations and a spleen scan. Her red blood cells were labeled with commercially available ^{51}Cr -sodium chromate and ACD at room temperature*. In addition, a second aliquot of blood was labeled with $^{99\text{m}}\text{Tc}$ according to the technique previously described for spleen scanning procedures (2). This procedure was also done at room temperature. At the end of the labeling procedures it was noted that in both instances visible agglutination of the red blood cells had occurred. Figure 1 shows the microscopic appearance of the blood cells. Study of the patient's red blood cells for cold agglutinins demonstrated no agglutination at 37°C , agglutination up to 1:2 dilution at room temperature, and up to 1:28 dilution at 4°C , indicating presence of a cold agglutinin.

Cold agglutinins occur mainly in association with macroglobulinemia and lymphosarcoma but may be seen transiently in certain infections such as infectious mononucleosis and atypical pneumonia (3,4). In cases of macroglobulinemia and other suspected cases of cold agglutination, extra care should be taken in the patient's red blood cells, and macroscopic and microscopic examination of the blood before re-injection should be undertaken in every case.

JOHANNES F. KLOPPER
HAROLD L. ATKINS
WILLIAM C. ECKELMAN
Medical Department
Brookhaven National Laboratory
Upton, New York

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* E. R. Squibb and Sons, New Brunswick, N.J. Specific activity 163 mCi/mg.

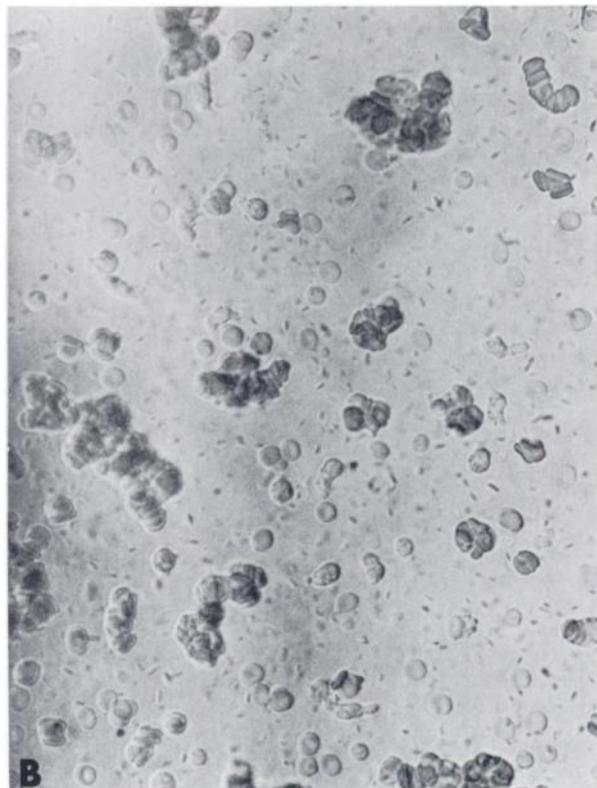
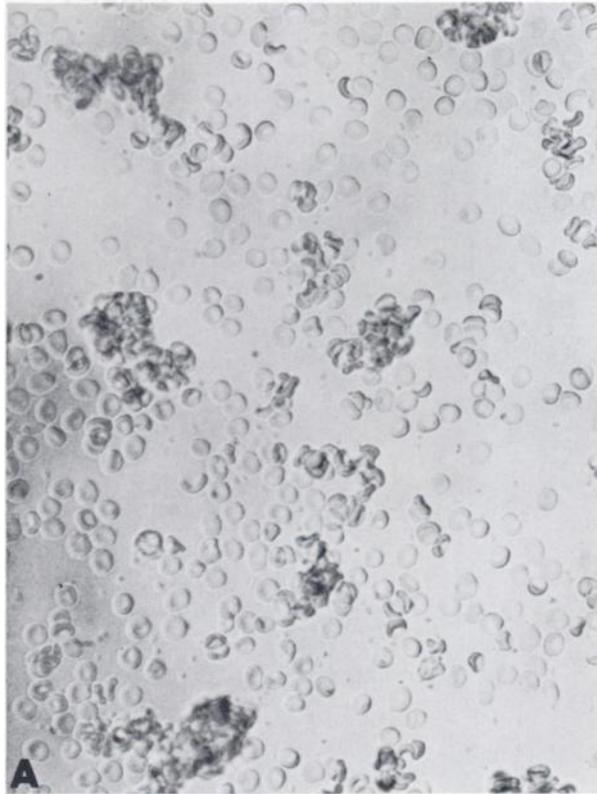


FIG. 1. A shows microscopic appearance of blood following labeling with ^{51}Cr . B shows microscopic appearance of blood following labeling with $^{99\text{m}}\text{Tc}$.