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DETERMINATION OF REACTION TIME CHANGES PER TIME UNIT IN CLOT ASSAYS. Lj. Popović. Medical Centre "C. Huis", Hospital Bračak, Zabok, Yugoslavia.

Changes in reaction time of clot assays are usually expressed only in time units, which fails to indicate the extent of the increase or decrease of the reaction time of the tested specimens against that of the basic sample. Reaction time increases of, *e.g.*, 6 seconds in tested samples, compared to basic sample reaction times of 12 and 24 seconds respectively, signify an increase twice as large in the first as in the second instance.

Changes in reaction time of clot assays can be expressed as the increment or decrement of the reaction time per time unit. This amount of increase or decrease (positive or negative alteration of reaction time, T_a) can be expressed as the quotient of the difference between the reaction times of the tested (T_x) and basic (T_o) samples and of the basic sample, *e.g.* in seconds per second, $T_a=T_x-T_o/T_o$. A test sample reaction time 6 seconds longer than basic sample reaction times of 12 and 24 seconds would mean an increase of 0.5 and 0.25 seconds per second, respectively.

Reaction time changes of tested samples against that of the standard sample (T_{std}) can be calculated in a similar way, $T_a=T_x-T_{std}/T_{std}$.

It can be assumed that this parameter reflects the intensity of the increase or decrease of reaction time per time unit. The quotient of the tested and basic samples can be considered as the coefficient of the increase or decrease of the total reaction time ($C_T=T_x/T_o$).

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EVIDENCE FOR THE APPEARANCE OF TWO DIFFERENT SETS OF POLYMERIZATION SITES UPON THE SEQUENTIAL RELEASE OF FPA AND FPB. F. Brosstad and P. Kierulf*. Hem. Res. & Centr. Lab. *Ullevål Univ. Clin. Oslo, Norway.

Human des-AA (fmA) and des-AABB (fmAB) fibrin monomers were prepared from fibrinogen (F) exposed to insol. reptilase or thrombin in 2.5M urea, pH 7.4, for 1h. FPA-RIA and N-term. amino acid anal. confirmed full conversion to fm species as above. Solubility of fmA and fmAB ( ) was determined by stepwise addition under whirlmixing to: I. Citrated plasma=10% (7.5%). II. $BaSO_4$-adsorbed, recalcified plasma=3% (2.5%). III. F in 0.15 M Tris pH 7.4=17% (13%). Labeled fmA and fmAB incubated with FSF (preactivated with insol. thrombin) disclosed lower rates of gamma-gamma dimer formation and especially alpha-polymer formation in fmA-clots than in fmAB clots. Affinity towards fibrinogen-Sepharose was definitely lower with fmA compared to fmAB when existing in soluble form in plasma. Increasing amounts of F progressively retarded and finally inhibited the polymerization of fmA and fmAB, and the retardation was linearly proportional to the F/fm ratio. The polymerization of fmA at a given F/fm ratio was more retarded than was that of fmAB. Ultracentrifugation (Airfug, Beckmann) of $BaSO_4$-adsorbed, recalcified plasma containing $I^{125}F$ and T^{131} fmA or fmAB suggests complex formation between F and fm. Similar experiments with EDTA-plasma disclosed no fmA-F complex formation, whilst fmAB-F complexes still could be traced.

From the above experiments it is concluded that two different sets of polymerization domains are exposed during the sequential release of FPA and FPB. Since fmAB solubility is far less than twice that of fmA, and the amount of F required to inhibit fmAB polymerization is far less than twice the amount of F necessary for inhibition of fmA polymerization, it is concluded that the polymerization domains exposed upon FPB release are less avid than the corresponding domains exposed upon FPA release.

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EVALUATION OF THE DUDLEY CLOTTING TEST IN HUMAN VOLUNTEERS. J. O'Connell, A. Rumaks, J. L. Williams. Becton, Dickinson Research Center, Research Triangle Park, N.C., U.S.A. T. R. Griggs. School of Medicine, University of North Carolina, Chapel Hill, N.C., U.S.A.

We have evaluated four materials (polyurethane, silicone rubber, Teflon, and heparin-coated polyurethane) for compatibility with blood in six human volunteers. The test method employs a standard indwelling intravenous catheter (16 ga, 2 1/2") through which 100 cm lengths of small-bore (0.5 mm inner diameter) tubes made from the materials to be tested are passed. The tubes are filled with saline before they are inserted, and the distal end of the tube is immersed in sterile mineral oil. The rate and duration of flow through these tubes is determined by counting drops of blood as they emerge into the mineral oil. The four materials were tested in each of six volunteers, in random order during a single day. The results are as follows:

Material	Duration of Flow (min. ± S.D.)
Polyurethane	26.2 ± 8.7
Silicone rubber	22.4 ± 12.2
Teflon	18.2 ± 6.6
Heparin-coated polyurethane	>300

The testing produced no complications in the subjects. The average blood loss after 5 hours of testing was 25 ml.

A safe and simple method for testing artificial materials for reactivity with native human blood is described. The major characteristics of the test are that the blood is in contact only with the test material and that multiple samples can be tested in a single subject on a single day.

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