FIBRINOLYTIC ACTIVITY (FA) OF NORMAL HUMAN PERIPHERAL BLOOD MONOCYTES (MC). E. E. Grau and I. A. Monroe. Royal Victoria Hospital and McGill University, Montreal, Quebec, Canada.

FA of blood encompasses a large cellular phase in addition to a fluid (plasma) phase. Polymorphonuclear neutrophils (PMN) have been implicated in this cellular activity, and MC have demonstrated fibrinolytic potential. Using a solid phase radiolabeled assay, we have examined FA of normal blood and plasma, and of purified PMN and MC alone, and with purified plasminogen (PLG), mini-plasminogen (mPLG) produced by PMN elastase digestion, or autologous plasma. PMN alone (0.5 x 10^6/ml) had striking activity (202 ± 25 SEM ng fibrin lysed/h), (n=10 normal subjects) while MC alone (0.5 x 10^6/ml) had mean FA of 32 ± 4 ng/h, all of which could be accounted for by contaminating PMN in the MC preparations (36 ± 8 ng/h). In comparison, mean whole blood FA was 72 ± 8 ng/h, and plasma FA was 22 ± 4 ng/h. When MC (0.5 x 10^6/ml) were assayed with PLG (2-40 μg/ml) or autologous plasma for 1 h, no significant FA was generated, indicating that neither intrinsic nor PLG-dependent (plasminogen activator, tPA) mechanisms were involved.

tPA promotes fibrinogenolysis. These data demonstrate that tPA facilitates platelet disaggregation through the plasmin-mediated proteolysis of cohesive fibrinogen. This phenomenon may be important in the dispersal of circulating platelet aggregates and may be operative in the thrombolytic activity of platelet-rich clots.