in the inhibitor molecule was found to have a profound effect on the inhibition constant of the acid. Saturated dicarboxylic acids, with the exception of oxalate, were less inhibitory as the molecular weight increased. A *cis* effect was observed in the inhibition by unsaturated organic acids; compounds with two *cis*-carboxyl groups were much more inhibitory than the corresponding *trans*-isomers. This position effect was investigated quantitatively by measurement of the distances between carboxyl groups in space-filling models of the inhibitors. When these distances were plotted against the inhibition constant of the inhibitor, the degree of inhibition was observed to increase linearly with the increasing proximity of the carboxyl groups.

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Inhibition of Blood Platelet Function by Cytochalasins: Effects on Thrombosthenin and on Glucose Metabolism

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The cytochalasins are mould metabolites that inhibit cytokinesis and cell movement (Carter, 1967). Cytochalasin B can also inhibit platelet aggregation (White, 1971) and clot retraction (Shepro *et al.*, 1970; White, 1971). An attempt has been made to correlate the effects of cytochalasins A and B on platelet function with biochemical changes.

Citrated pig platelet-rich plasma at 37°C was used. Platelet aggregation was initiated with ADP (10 µM) and clotting with bovine thrombin (10 N.I.H. units/ml) in both cases 5 min after addition of cytochalasin. Cytochalasin A inhibited aggregation completely at 20 µg/ml (42 µM), but cytochalasin B only partially at 100 µg/ml (209 µM). Clot retraction was inhibited completely by 4 µg/ml of cytochalasin A and by 20 µg/ml of cytochalasin B. Cytochalasin A (but not cytochalasin B) reacted with added cysteine, which blocked its effects.

Thrombosthenin (platelet actomyosin) was extracted from pig platelets (Grette, 1962; Haslam & Mustard, 1969). The effects of 0.1 mM-ATP on the turbidity of stirred suspensions of thrombosthenin in 60 mM-KCl at pH 7.0 were recorded. In the presence of 4 mM-MgCl₂, ATP cleared the suspension. This effect was inhibited by cytochalasin A (5–50 µg/ml) but not by cytochalasin B (100 µg/ml). With 15 mM-

MgCl₂, ATP caused a rapid superprecipitation which was similarly inhibited by cytochalasin A but not by cytochalasin B. Thrombosthenin was also isolated from platelets that had been incubated with cytochalasin A (4 or 20 µg/ml) for 5 min and then washed. Only with 20 µg/ml were the clearing and superprecipitation phenomena markedly inhibited. Thus only the inhibition of aggregation by cytochalasin A was associated with marked changes in thrombosthenin.

Washed rabbit platelets depleted of endogenous substrates rapidly form ¹⁴CO₂ from [6-¹⁴C]glucose (McElroy *et al.*, 1971). In this system cytochalasin A at 4 µg/ml and at 20 µg/ml inhibited ¹⁴CO₂ formation by about 30 and 70% respectively, whereas these concentrations of cytochalasin B inhibited by 91 and 98%. Thus the relative effectiveness of cytochalasins A and B was reversed in these experiments.

The biological activities of cytochalasin B have been attributed to disruption of contractile microfilaments (Schroeder, 1970; Wessells *et al.*, 1971). The effect of cytochalasin B on glucose metabolism and its lack of effect on thrombosthenin suggest that this conclusion may be premature.

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Amino Acid Sequences in Penicillo-pepsin: Evidence for Homology with Porcine Pepsin and Chymosin

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Penicillo-pepsin is an extracellular acid protease secreted by *Penicillium janthinellum*. Its purification and properties have been reviewed (Šodek & Hofmann, 1971). Earlier it was shown that the amino acid sequence around the active-site aspartic acid residue is almost identical with that of porcine pepsin (Šodek & Hofmann, 1970). In further sequence studies peptides have now been obtained from tryptic, chymotryptic and thermolytic digests by separation on