The use of a gelatin hydrolysate to improve the compressibility of paracetamol and phenacetin

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To overcome the capping which frequently occurs in tablets during compression of phenacetin and paracetamol, Elowe, Higuchi & Busse (1954), formulations incorporating a high concentration of binding agents are used. BYCO (Croda Food Products Ltd.) is obtained from high quality grade gelatin by hydrolysis under controlled conditions. This material comes in various grades. Grade A is recommended as a granulating and binding agent and it has a moisture content of 4 to 7% and average molecular weight of 1000–2000. It exists in the form of a white, spray-dried powder.

A sufficient quantity of the hydrolysate grade A to give 4% concentration based on the dry weight of the materials was added to the dry crystals of phenacetin and paracetamol in a wide mouth jar. Thorough blending was achieved by rolling the closed jars on the roller mill for 1 h. A mixture containing 4% of hydrolysate and 2% moisture was also prepared. Compression was carried out at four machine settings, which gave approximately 45, 90, 140 and 180 MN m^{-2}, on an instrumented single punch tablet machine. The resultant tablets were examined for capping and lamination. Crushing strength was determined by diametral crushing as described by Shotton & Ganderton (1960). Tablets were unsatisfactory if, when removed from the die, they were not sufficiently firm for dimensions to be taken or if capping occurred.

While satisfactory tablets were produced from the formulations containing the hydrolysate, the crystals without additives gave unsatisfactory tablets. The mixtures containing the hydrolysate and moisture however gave the strongest tablets. It was used as a water-soluble binder and the addition of moisture probably activated its binding properties.

Plots of maximum die-wall pressure and residual die-wall pressure as a function of compression pressure, showed significantly greater values for crystals with the hydrolysate than those without. Again, the greatest transmission of pressure to the die wall was recorded for the mixture containing moisture and hydrolysate. The hydrodynamic action of water on the crystal would be expected to result in an increased transmission to the die wall, this is in agreement with the findings of Rees (1967). There is an indication here, also that, where there was capping or lamination the residual die-wall pressure was very low indicating considerable axial relaxation.

The inclusion of this hydrolysate in a formulation appears to be useful for converting a material which is only tableted with difficulty into a directly compressible form. Very similar results were obtained using grade C of the hydrolysate (molecular weight 10 000–12 000).

We are grateful to Croda Food Products Ltd. for a gift of Byco.

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The effect of candicidin on exogenous cholesterol absorption in small laboratory animals

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Candicidin is a heptaene macrolide reported to reduce prostatic hyperplasia in dogs (Gordon & Schaffner, 1968), hamsters and as valuable in the symptomatic relief of human benign prostatism, (Keshin, 1973). In the course of study of mechanisms of action, aspects of lipid metabolism are involved, since early work indicated that the cholesterol level in human prostate hypertrophic tissue was elevated (Swyer, 1942) although this was not found to be so by Marks (1974, personal communication), and in the light of the postulated relations be-