The amount of ^{65}Zinc associated with low molecular weight constituents in pooled human serum, *i.e.* the fraction of zinc in the circulation called 'free' zinc, may be increased by administering zinc in the form of zinc-histidine.

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The effect of blending on the physical properties of acid and alkaline gelatin gels

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The relation between rigidity and concentration of gelatin gels has been studied extensively by Ferry (1948). Similar studies with gelatins having widely differing molecular weights have been restricted to 5·73% gels. Ferry (1948) found that the rigidity of a 50:50 mixture of two gelatins was lower than the arithmetic mean of the rigidities of the individual samples.

The viscoelastic properties of mixtures of acid and alkaline gels have been determined in the linear region for the concentration range 1·5–3·5% w/v using non-destructive creep compliance tests. Rigidities of the mixtures have been measured using a modified Saunders and Ward rigidiometer, (Timson & Kelly 1966), for the concentration range 10–50%.

1·5–3·5% w/v gels were prepared and maintained at 50° for 1 h and then at 4° for 21 h. The gels having been equilibrated at 25° for 2 h were loaded between the cone and plate of an air turbine viscometer (Marriott, Irons & Harris, 1973) and equilibrated for a further period of 1 h at 25° in a saturated atmosphere. Gels in the higher concentration range (10–50%) were prepared and maintained at 50° for 1 h, poured into the rigidiometer tubes, allowed to cool to 4° and aged for 21 h. The gels were equilibrated at 25° for 30 min and rigidities determined.

The semi rigid gel mixtures (1·5–3·5% w/v) were opalescent and analysis of the creep compliance curves indicated a decrease in gel structure when compared with the unmixed gelatin gels. The 75:25 acid/alkaline gelatin mixture was found by 'u' tube viscometry and microelectrophoresis to be at the isoelectric point and produced gels exhibiting a maximum compliance.

Conversely, rigid gels (10–50% w/v) exhibited increases up to 15 fold over acid and alkaline samples upon mixing and broad maxima occurred in the rigidity-concentration graphs between 40–50% alkaline, 50–60% acid blends. Charge effects did not appear critical in the more rigid gel network resulting from the interaction between acid and alkaline samples. The increase in rigidity may be due to an increase in entanglements, interactions between end groups in both samples or incorporation of the lower molecular weight acid gelatin chains into the gel interstices of the higher molecular weight alkaline chains giving rise to a 'filling' effect.

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