Graph referenced as "Light scattering. Insulin dimerization"

Contributors

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Publication/Creation

February 1963

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$\partial\mu_1/\partial c$ in equation 17–25. The result is that

$$\frac{\mathscr{K}c}{R_\theta} = \frac{1}{M}\left[1 - \frac{1}{2}\left(\frac{\pi\mathcal{N}}{M}\right)^{1/2}\left(\frac{\overline{Z^2}\epsilon^2}{DkT}\right)^{3/2} c^{1/2}\right] \qquad (17\text{–}34)$$

with the understanding that this is a limiting expression, applicable only near $c = 0$.

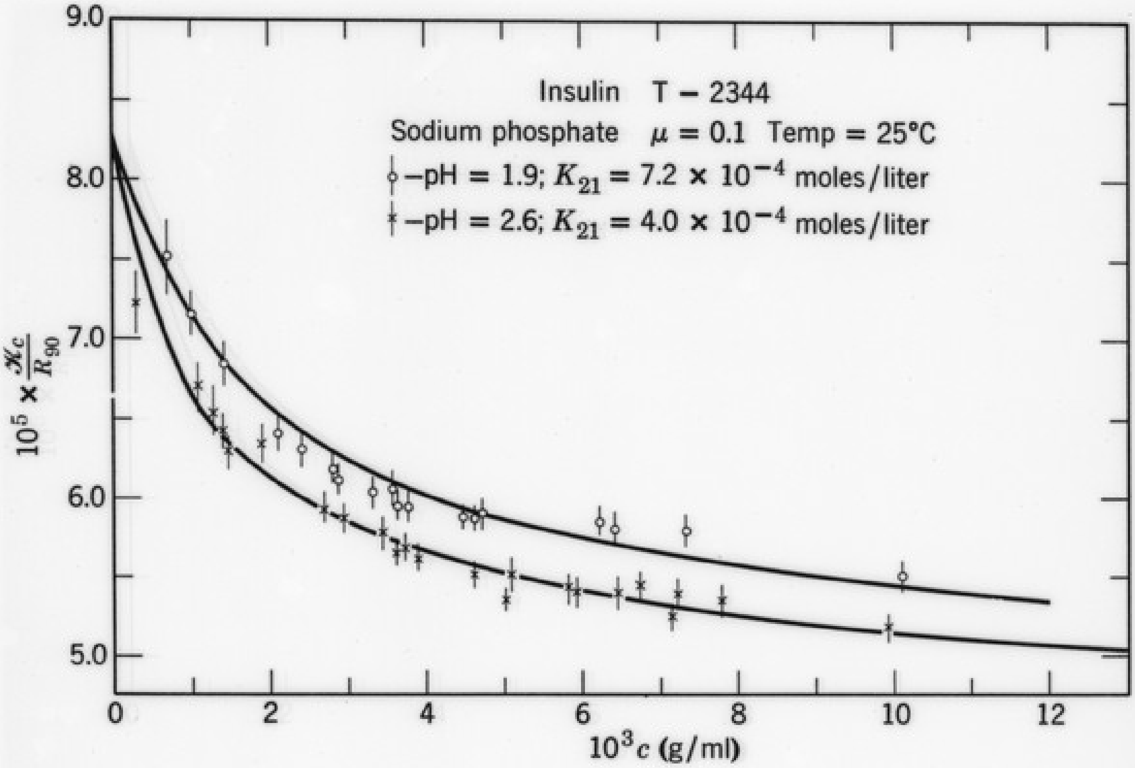

Fig. 17–6. Light scattering data for insulin at low pH. K_{21} is the equilibrium constant for dissociation of an aggregate (assumed mol. wt. 24,000) into two identical units of mol. wt. 12,000. (Doty and Myers.[34])

The validity of equation 17–34 is fully confirmed by light scattering data determined by Timasheff et al.[59] for essentially isoelectric solutions of serum albumin. Figure 17–7 shows their data as plotted according to equation 17–30, and it is seen that $\mathscr{K}c/R_0$ cannot be represented as a linear function of c. Figure 17–8 shows the same data plotted versus $c^{1/2}$, and we see that a linear relation is obtained, as predicted by equation 17–34. The straight line (as c approaches zero), which is drawn through the data, is actually a calculat… experimental titration