

## **Graph referenced as "Light scattering. Insulin dimerization"**

### **Contributors**

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dependence of  $\mathcal{K}c$

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

$$\frac{\mathcal{K}c}{R_0} = \frac{1}{M} \left[ 1 - \frac{1}{2} \left( \frac{\pi N}{M} \right)^{1/2} \left( \frac{\bar{Z}^2 \epsilon^2}{DkT} \right)^{3/2} c^{1/2} \right] \quad (17-34)$$

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

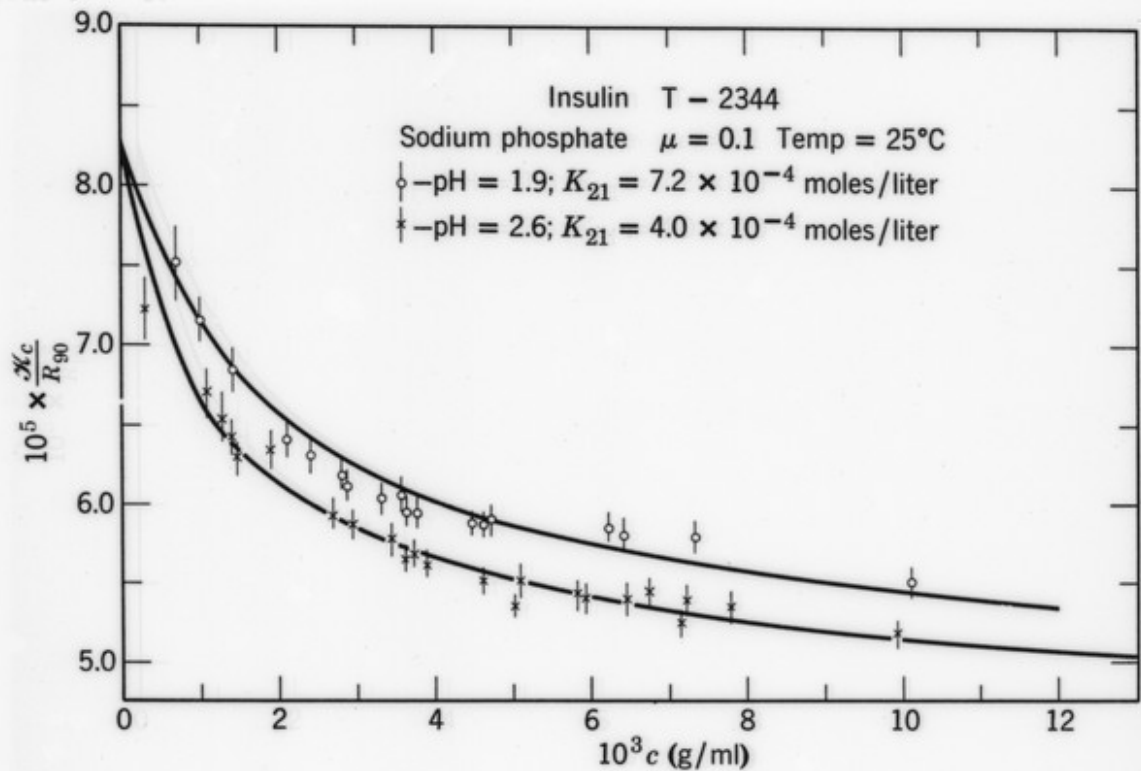


Fig. 17-6. Light scattering data for insulin at low pH.  $K_{21}$  is the equilibrium constant for dissociation of an aggregate (assumed mol. wt. 24,000) into two identical units of mol. wt. 12,000. (Doty and Myers.<sup>34</sup>)

The validity of equation 17-34 is fully confirmed by light scattering data determined by Timasheff et al.<sup>39</sup> 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  $\mathcal{K}c/R_0$  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 calculated experimental titration