Equation (6.84) inserted in this gives

$$\frac{dx}{dt} = \frac{1}{L_0} gN \tag{6.87}$$

Substituting Eq. (6.83) into this gives

$$\frac{dx}{dt} = \frac{gN_0}{L_0} \exp(qt) \tag{6.88}$$

This integrates to

$$x = \frac{gN_0}{L_0 q}[e^{qt} - 1] = A[e^{qt} - 1] \tag{6.89}$$

where the term $A = gN_0/L_0 q$ has been introduced for convenience. Equation (6.89) is equivalent to

$$\ln[1 + Ax] = qt \tag{6.90}$$

Fig. 23 shows data treated in this fashion.

12. CASES OF INTERACTION OF A LIQUID WITH A POORLY SOLUBLE DRUG

There are cases where there are liquids in a solid dosage form. An example is panthenol in a multivitamin tablet. Here it is customary to adsorb the liquid onto a solid carrier, and in the case of panthenol, magnesium trisilicate is used. At elevated temperatures (and at room temperature under compression as well) the panthenol will ooze out of the carrier and come into intimate contact with other solids. If interaction potentials exist, then separation techniques such as triple-layer

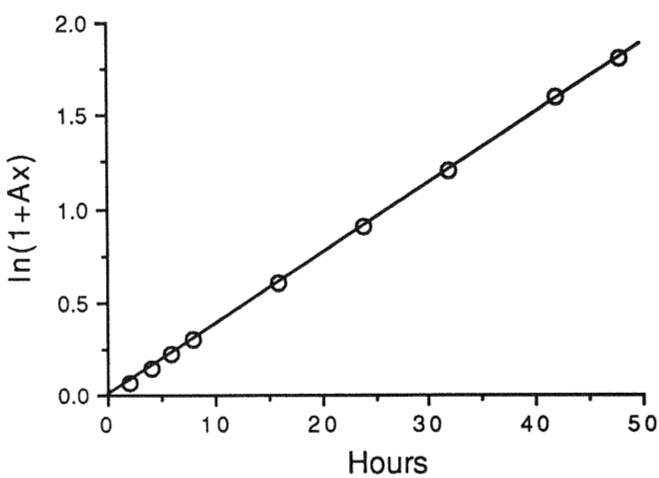

Fig. 23 Furoic acid data treated according to Eq. (6.90). (Graph constructed from data by Carstensen and Kothari, 1983.)