



FIGURE 7.17 A Kaplan–Meier survival curves can be used to determine the efficacy of various doses of a candidate compounds in an infection model. In this graph, infected mice treated with the vehicle die faster than mice treated with a candidate compound at two different doses.

information can be used to compare the efficacy of multiple compounds or dose levels⁴⁷ and is generally displayed as Kaplan–Meier survival curve (Figure 7.17).

The Mouse Model of Influenza Virus Infection

Animal models of viral infections are also available to support the development of novel antiviral agents. The influenza virus, for example, can be studied using a variety of laboratory mice, as most of them are susceptible to infection with the influenza virus. The mice are typically infected with a strain of the influenza virus intranasally. The infection is allowed to become established over a brief time period (e.g., 4 h), and then the mice are treated with candidate compounds on a set schedule. Compound efficacy can be determined by sacrificing the mice at fixed time points after dosing and determining the viral load and cytokine activity in the lung tissue of the animals. Candidate compounds with the desired antiviral activity will demonstrate decreased viral load and cytokine activity as compared to control mice. Alternatively, survival of the mice postinfection can be monitored and compared to survival of untreated animals as a measure of compound efficacy.⁴⁸