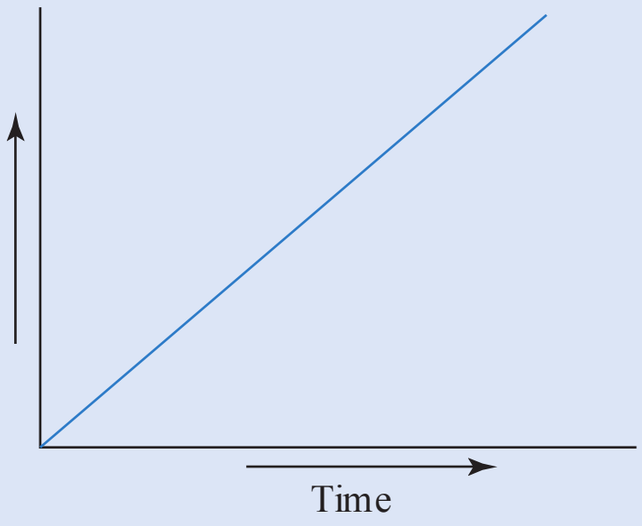
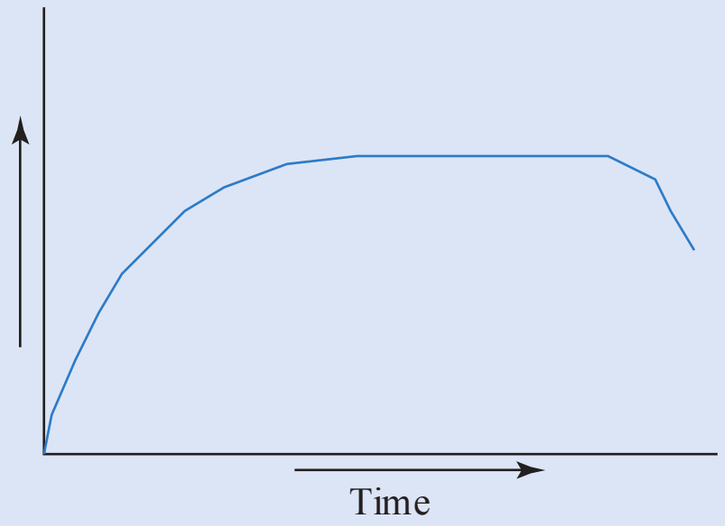
Table 31.1 Release patterns for modifed release

Release patterns for modifed release include:
(a) constant release rates
(b) declining drug release profle
(c) delayed release and
(d) bimodal release.

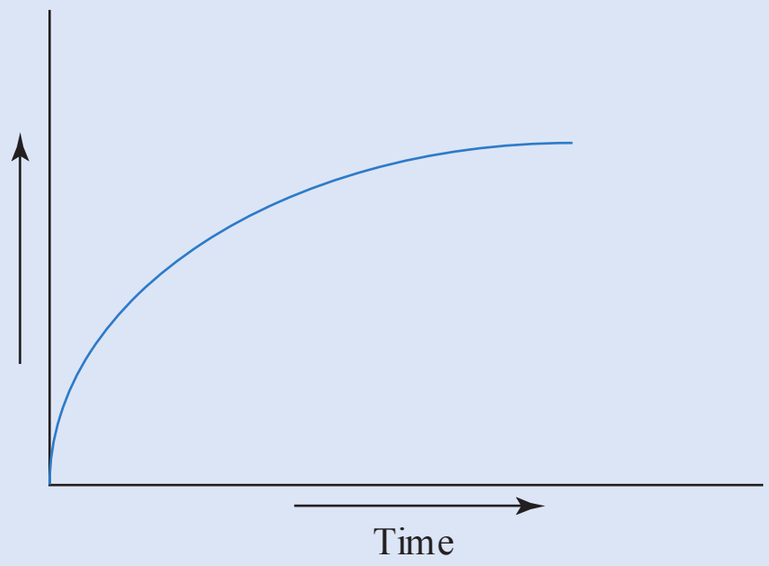
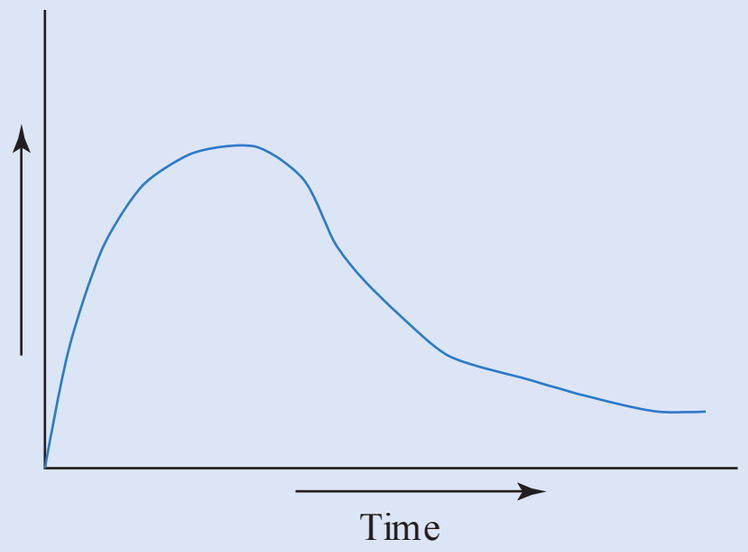
Note that drug release profles show how the drug is released in a simple system e.g. into dissolution media and the fgures (left graphs) show a cumulative release over time (ideally 100% of drug should be released) and are only influenced by drug release from the dosage form. Drug in blood profles (right graphs) are influenced by drug release, but also by absorption, distribution, metabolism and elimination (ADME) and so drug levels in the blood rise and fall according to all these parameters combined. Thus, drugs with the same release profle may have different blood drug profles. An example blood drug profle for each is shown here.

(a) Constant release

Drug release profle	Drug in blood profle
	

To maintain constant drug blood concentrations a constant release rate is preferred. These follow zero-order kinetics. In the human body, these drug levels take time to build up in the blood to a stable level.

(b) Declining release

Drug release profle	Drug in blood profle
	

Drug release from these types of systems is often a function of the square root of time or follows frst-order kinetics. They do not maintain a constant blood drug concentration but can provide a sustained release.

Table continued overpage