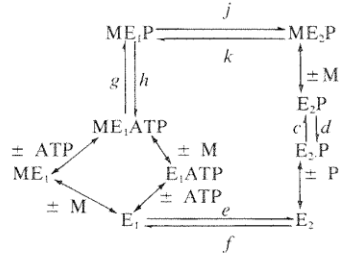


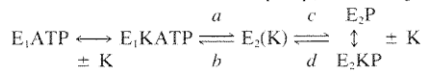
TABLE 6.2

Rate Constants for the Various Transitions of the Metal-Dependent ATPases<sup>a</sup>

The listed rate constants refer to the following scheme for the catalytic cycle (M is the cation)



with the addition, for the Na<sup>+</sup> + K<sup>+</sup> pump, of the major path:



[All values in seconds<sup>-1</sup>. Measured at room temperatures (20–25°C)]

Rate constant(sec <sup>-1</sup> )	Na <sup>+</sup> , K <sup>+</sup> -ATPase	Sarcoplasmic reticulum Ca <sup>2+</sup> -ATPase	Gastric mucosa H <sup>+</sup> , K <sup>+</sup> -ATPase
<i>a</i>	300 <sup>(1)</sup>	—	—
<i>b</i>	0.3 (no ATP) <sup>(2)</sup> 100 (+ATP) <sup>(3,4)</sup>	—	—
<i>c</i>	1 (no Pi) <sup>(2)</sup> 60 (+Pi) <sup>(3,4)</sup>	40–50 <sup>(8)</sup>	—
<i>d</i>	230 <sup>(5)</sup>	3–4(pH 6.0, no K <sup>+</sup> ) <sup>(8)</sup> 60 (pH 6.8, 80 mM K <sup>+</sup> ) <sup>(8,9)</sup>	0.18 (no K <sup>+</sup> ) <sup>(15)</sup> 6.7 (+K <sup>+</sup> ) <sup>(15)</sup>
<i>e</i>	0.01 <sup>(2)</sup>	30 <sup>(10)</sup> , 14 <sup>(11)</sup>	—
<i>f</i>	0.15 <sup>(2)</sup>	3 <sup>(11)</sup>	—
<i>g</i>	180 <sup>(5)</sup>	100 <sup>(8)</sup> , 150 <sup>(12)</sup> , 170 <sup>(13)</sup>	>73 <sup>(15)</sup>
<i>h</i>	17 <sup>(6)</sup>	200 <sup>(8)</sup>	—
<i>j</i>	30→50 <sup>(7)</sup>	10 <sup>(14)</sup>	3.5 <sup>(15)</sup> , 5→6 <sup>(16)</sup>
<i>k</i>	10→17 <sup>(6)</sup>	>10 <sup>(14)</sup>	2.3 <sup>(17)</sup>

<sup>a</sup> Key to references: (1) Karlish (1980); (2) Karlish and Stein (1982a); (3) Karlish *et al.* (1978); (4) Karlish *et al.* (1982); (5) Mårdh and Zetterqvist (1974); (6) Calculations from data of Mårdh (1975); (7) Mårdh (1975); (8) Inesi *et al.* (1982); (9) Guillain and Boyer (1982); (10) Dupont and Leigh (1978); (11) Guillain *et al.* (1980); (12) Fröhlich and Taylor (1975); (13) Pickart and Jencks (1982); (14) Calculations from turnover number and CaE<sub>2</sub>P ⇌ CaE<sub>2</sub>P equilibrium; (15) Wallmark *et al.* (1980); (16) Stewart *et al.* (1981); (17) Calculations from H E<sub>2</sub>P ⇌ H E<sub>2</sub>P equilibrium.