

**Table 1.** Principal Phage Parameters Tested for the Analysis of Covariance with Decay Rate

Name	Type of Phage		Measured Life Cycle Characteristics						Published Structural Properties			Calculated Ratio	
	Family	Life Cycle	Decay Rate (d)	Burst Size	Latency Period (min)	Multiplication Rate <sup>a</sup> (h <sup>-1</sup> )	Adsorption Rate (min <sup>-1</sup> )	$E_a^b$ (kJ/mol)	Genome Size (kb)	Ext. Diameter <sup>c</sup> (nm)	Capsid MW <sup>d</sup> (kDa)	Surface Mass <sup>e</sup> (kDa/nm <sup>2</sup> )	$\rho_{pack}^f$
$\lambda$	Siphoviridae	T	0.072	115	42	162	$4.5 \times 10^{-10}$	142	49 [37]	63 [24]	22,500 [38]	22.7	0.572
M13	Inoviridae	Chronic	0.074			413	$9.0 \times 10^{-11}$	125	6 [37]	6.5x90 [37]	15,700 [39]	8.7	
MS2	Leviviridae	L	0.250	400	40	669	$6.5 \times 10^{-10}$	99	4 [37]	27 [40]	2,500 [41]	13.7	
Mu	Myoviridae	T	0.290	200	60	200	$\phi$	111	43 [37]	54 [42]	15,000 [43]	20.6	0.845
P1	Myoviridae	T	0.077	400	60	149	$2.2 \times 10^{-10}$	119	100 [37]	85 [44]			0.435
P2	Myoviridae	T	0.041	160	48	88	$5.5 \times 10^{-11}$	123	34 [37]	60 [45]	20,400 [46]	22.7	0.468
P4	Myoviridae	T	0.045	300	60	101	$2.2 \times 10^{-10}$	105	12 [37]	45 [46]	12,400 [46]	24.5	0.429
$\phi$ 80	Siphoviridae	T	0.120	600	55	776	$3.8 \times 10^{-10}$	114	45	61		24.3	0.585
$\phi$ X174	Microviridae	L	0.200	180	15	697	$2.9 \times 10^{-9}$	136	5 [37]	32 [47]	4,700 [48]	18.4	
PRD1	Tectiviridae	L	0.037	50	48	50	$4.6 \times 10^{-10}$	171	15 [49]	65 [49]	33,000 [49]	35.5	0.421
T2	Myoviridae	L	0.068	135	23	335	$4.0 \times 10^{-10}$		170 [37]	85x110 [50]		19.9	0.451
T3	Podoviridae	L	0.102	200	17	700	$1.6 \times 10^{-9}$	105	38 [51]	60 [52]		18.1	0.525
T4	Myoviridae	L	0.068	150	23	400	$5.0 \times 10^{-10}$	96	170 [37]	85x110 [50]	65,600 [50]	26.9	0.421
T5	Siphoviridae	L	0.120	290	44	399	$2.0 \times 10^{-10}$	115	122 [53]	65 [53]	27,500 [53]	13.7	0.439
T7	Podoviridae	L	0.187	260	13	1,131	$3.0 \times 10^{-9}$	100	40 [37]	60 [52]	16,300 [54]	19.4	0.615
R17	Leviviridae	L	0.520	3,570	53	4,288	$3.7 \times 10^{-9}$	99	4 [37]	27 [55]	2,600 [41]	14.7	

Mortality rate, burst size, latency period, and adsorption rate were measured as described in Material and Methods. Each value is the mean of at least three independent experiments. Genome size, diameter, and molecular weight were collected from published results. The internal volume used to calculate  $\rho_{pack}$  has either been collected in structural studies of phage capsids or calculated by subtracting the thickness of the shell from the external diameter. Empty cells in the table correspond to data that were either not available or not measured.

<sup>a</sup>Mean of the ratio obtained by dividing the burst size by the latency period, calculated for each experiment.

<sup>b</sup> $E_a$ : energy of activation of the reaction leading to inactivation of virions, obtained from the Arrhenius equation linking mortality rate and temperature between 30 °C and 45 °C. The energy of activation represents the energy the system has to overcome so that the reaction occurs.

<sup>c</sup>Ext. diameter: external diameter of the capsid.

<sup>d</sup>Molecular weight of the proteins constituting the capsid.

<sup>e</sup>Capsid molecular weight divided by the surface of the capsid; this ratio represents the thickness of the shell.

<sup>f</sup>Volume occupied by the genome divided by the internal volume of the capsid.

T: Temperate phage, L: Virulent Phage, Chronic: creates a chronic infection

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