Table 20-1. T7 genes

Class I	Function[a]	Selected references
0.3	B-DNA mimic; anti-type I restriction	301
0.4, 0.5, 0.6A, 0.6B	not conserved; non-essential	
0.7	protein kinase; host-transcription shut-off; Col Ib exclusion	84, 211
1	T7 RNA polymerase	159, 287, 321, 329
1.1	conserved, non-essential	
1.2	*E. coli* dGTPase inhibitor; F-exclusion	188, 190, 233, 235, 237
1.3	DNA ligase	271, 262
Class II		
1.4, 1.5, 1.6	not conserved, non-essential	
1.7	full-length gene not conserved; beneficial for growth	
1.8	poorly conserved, non-essential	
2	*E. coli* RNAP inhibitor	200
2.5	SSB	128, 133
2.8	not conserved, non-essential; homing endonuclease?	
3	endonuclease I, Holliday junction resolvase	51, 122
3.5	amidase (lysozyme); regulates T7 RNAP activity	329
3.8	not conserved, non-essential; homing endonuclease	
4A	primase-helicase; gp4B helicase from internal in-frame start	69

4.1, 4.2	overlappons; not conserved	
4.3, 4.5	conserved, non-essential	275
4.7	not conserved, non-essential	275
5	DNA polymerase	58, 148, 149
5.3	not-conserved, non-essential, homing endonuclease	
5.5	conserved, non-essential, binds *E. coli* HNS; λ*rex* exclusion	153, 154
	non-conserved –1 frameshift leads to T7 *5.5-5.7* fusion	
5.7	conserved non-essential	
5.9	inhibits RecBCD nuclease, non-essential, not conserved	153
6	5´->3´double-stranded exonuclease, RNase H	147, 251
6.3	poorly conserved, non-essential	

Class III

6.5	conserved, non-essential	
6.7	virion protein; ejected into infected cell	119
7	non-essential, not conserved; host range	62, 273
7.3	essential virion protein; ejected into infected cell	119
7.7	not conserved, homing endonuclease	
8	head-tail connector protein	25, 298
9	scaffolding protein	24
10A	major capsid protein; -1 frame-shift yields	
	minor capsid protein gp10B F exclusion	24, 45, 188, 190
11	tail protein	262

12	tail protein	262
13	essential; required for gp6.7 incorporation in virion	119
14	internal core protein; ejected into infected cell	189
15	internal core protein; ejected into infected cell	189
16	internal core protein; ejected into infected cell	183, 184, 189, 268
17	tail fiber protein	115, 263
17.5	class II holin	302
18	small terminase subunit	89, 309
18.5-18.7	conserved; λ *Rz-Rz1* homologs	21
19	large terminase subunit	193, 195, 310
19.2, 19.3	overlappons, conserved	
19.5	non-essential, conserved	126, 127

[a] Conserved or not conserved refers to close relatives of T7