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**Table 36-3. Similarity of selected functions within the P335 phages**

Function	Group I	Group II	Group III	Group IV	Group V
Integrase	<b>r1t (ORF1)</b> bIL285 (ORF1: 98%) ΦLC3 (INT: 97%) BK5-T (ORF33: 97%) Tuc2009 (ORF1: 97%) bIL309 (ORF1: 40%) TPW22 (INT: 27%)	<b>TP901-1 (ORF1)</b>	<b>bIL286 (ORF1)</b> bIL309 (ORF1: 25%) ul36 (ORF359: 99%)		
Super infection exclusion	<b>r1t (ORF2)</b> Tuc2009 (SIE <sub>2009</sub> : 100%) ΦLC3 (ORF173: 100%)	<b>TP901-1 (ORF2)</b> bIL285 (ORF2: 98%) bIL309 (ORF2: 66% C)	<b>BK5-T (ORF34)</b>		
Repressor	<b>r1t (RRO)</b> bIL309 (ORF3: 97%) ΦLC3 (ORF286: 79%) Tuc2009 (ORF4: 78%) BK5-T (ORF35: 79%)	<b>TP901-1 (ORF4)</b> bIL285 (ORF4: 98%) Φ31 (ORF180: 68% N) 4268 (ORF1: 67%N) ul36 (ORF188: 53%) bIL286 (ORF4: 32%)			
Cro-like	<b>r1t (TEC)</b> bIL309 (ORF7: 100%)	<b>TP901-1 (MOR)</b> bIL285 (ORF5: 98%) Φ31 (ORF74: 50%) ul36 (ORF74A: 50%) 4268 (ORF2: 50%)	<b>BK5-T (ORF37)</b>	<b>Tuc2009 (ORF5)</b> ΦLC3 (ORF76: 100%)	

Anti-repressor	<b>r1t (ORF5)</b> BK5-T (ORF38: 96%) bIL309 (ORF8: 40% N)	<b>TP901-1 (ORF6)</b> bIL285 (ORF6: 100%) bIL286 (ORF6: 65% C) ΦLC3 (ORF236: 95% C) Tuc2009 (ORF6: 94% C) Φ31 (ORF238: 94% C) Φ31.1 (ORF238: 94% C) ul36 (ORF238: 94% C) 4268 (ORF3: 94% C)			
Excisionase	<b>r1t (ORF6)</b> ΦLC3 (ORF110: 99%) Tuc2009 (ORF7: 97%) bIL285 (ORF7: 97%) BK5-T (ORF39: 97%) ul36 (ORF111a: 97%) ul36.1 (ORF111b: 97%) 4268 (ORF4: 95%) bIL309 (ORF9: 75%)	<b>TP901-1 (ORF7)</b>			
Replication protein	<b>Tuc2009 (ORF16)</b> bIL285 (ORF16: 99%) ul36 (ORF255: 99%) r1t (ORF11: 30% N) bIL309 (ORF14: 54% C) 4268 (ORF11: 53% C) bIL286 (ORF16: 24% C)	<b>TP901-1 (ORF13)</b> BK5-T (ORF49: 27% C) ul36.1 (ORF235: 33% C) Φ31.1 (ORF269: 33% C)	<b>Φ31 (ORF492)</b>		
Holliday junction resolvase	<b>r1t (ORF14)</b> bIL285 (ORF18: 99%) ul36 (ORF129: 98%) Tuc2009 (ORF19: 97%) BK5-T (ORF51: 97%)	<b>TP901-1 (ORF15)</b> Φ31.1 (ORF139: 97%) ul36.1 (ORF109: 76%) bIL309 (ORF17: 32%)			

Large terminase subunit	<b>rIt (ORF27)</b> Φ31(ORF5: 97%) ΦLC3 (ORF180': 97% N)	<b>TP901-1 (ORF31)</b> ul36 (ORF462: 97%) Tuc2009 (ORF31: 66% N) Tuc2009 (ORF32: 97% C)	<b>BK5-T (ORF2)</b> bIL286 (ORF41: 99%) 4268 (ORF31: 72%) bIL309 (ORF39: 34%) bIL285 (ORF41: 23%)		
Major head protein	<b>rIt (ORF31)</b>	<b>TP901-1 (ORF36)</b> Tuc2009 (ORF37-39: 98%)	<b>BK5-T (ORF7)</b> 4268 (ORF35: 97%) bIL286 (ORF45: 96%) bIL285 (ORF44: 23%)	<b>bIL309 (ORF43)</b> bIL285 (ORF44: 26%)	<b>ul36 (ORF287)</b>
Lysin	<b>rIt (ORF49)</b>	<b>TP901-1 (ORF53)</b> ul36 (ORF429: 96%) ΦLC3 (LYSB: 95%) TPW22 (ORFA: 94%) Tuc2009 (ORF57: 93%)	<b>BK5-T (ORF27)</b> bIL285 (ORF62: 98%) bIL286 (ORF61: 97%) bIL309 (ORF56: 97%) Φ31(LYS: 98% N)	<b>4268 (ORF49)</b>	

Foot-note for Table 36-3: For each group the identity of proteins encoding the same function is indicated in percentage of the type protein encoded by the phage marked in bold. C: Only similarity in the C-terminal, N: Only similarity in the N-terminal. Proteins showing high similarity is placed in the same group, however some similarity may be found in between groups, e.g. repressor group I and II. In addition, some proteins may belong to the same protein family without being in the same group, e.g. integrase group I and III that contains λ-like integrases.