

Bacteriophage Name: Rosebush

Cluster: B2

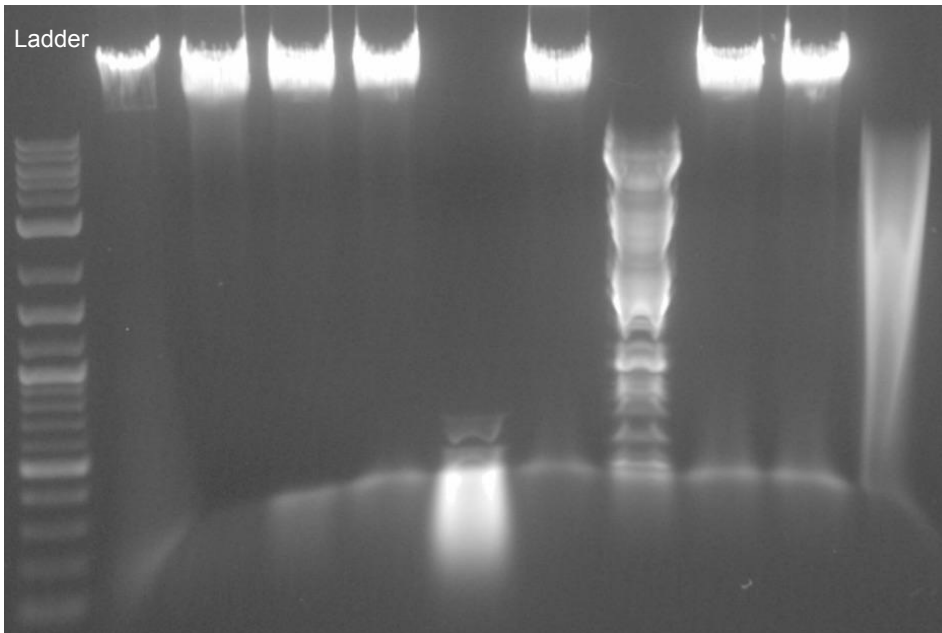
Host Bacterium: *Mycobacterium smegmatis* mc²155

Actual Digest

Enzyme Used

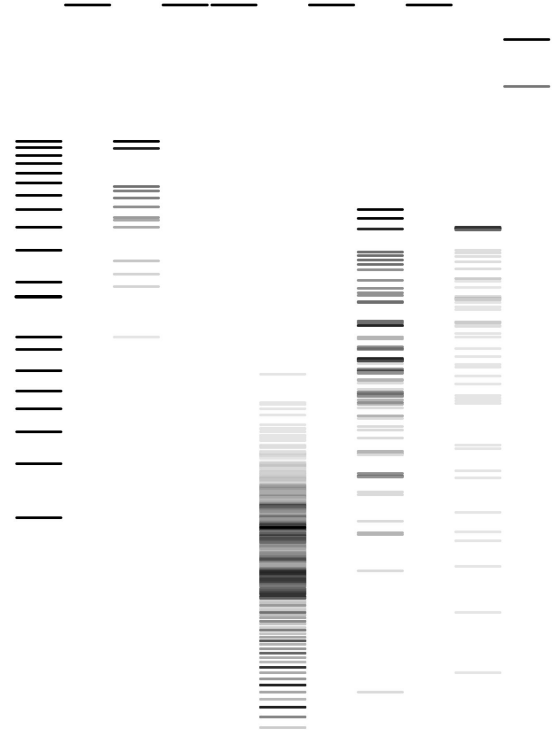
Cut Pattern

Uncut	BamHI	Clal	EcoRI	HaeIII	HindIII	Nspl	SacII	Sall	
Msel	B	E	E	E	E	E	E	B	I



Virtual Digest

Ladder	Uncut	Clal	EcoRI	HaeIII	Nspl	SacII	Sall	Msel
	BamHI			HindIII				



E = Expected

I = Impaired

B = Blocked

As a control, we reproduced the results published with *Enterobacteriophage* 9g DNA (Fig. [5a](#)); no digestion was observed with BamHI, EcoRI, EcoRV, and SmaI, while it was partially restricted with BstXI, HaeIII, MluI, NdeI, and PciI.

Mycobacterium phage Rosebush DNA that carries preQ0 showed a slightly different pattern of resistance. The restriction profiles for BamHI, BstXI, and EcoRV were identical to those of *Enterobacteria* phage 9g. However, Rosebush DNA was fully sensitive to HaeIII, MluI, and PciI and resisted NdeI degradation (Fig. [5b](#)). EcoRI and SmaI could not be tested because the corresponding sites are absent in the *Mycobacterium* phage Rosebush genome.

Hutinet G, Kot W, Cui L, Hillebrand R, Balamkundu S, Gnanakalai S, Neelakandan R, Carstens AB, Fa Lui C, Tremblay D, Jacobs-Sera D, Sassanfar M, Lee YJ, Weigele P, Moineau S, Hatfull GF, Dedon PC, Hansen LH, de Crécy-Lagard V. 7-Deazaguanine modifications protect phage DNA from host restriction systems. *Nat Commun.* 2019 Nov 29;10(1):5442. doi: 10.1038/s41467-019-13384-y. PMID: 31784519; PMCID: PMC6884629.

<https://pubmed.ncbi.nlm.nih.gov/31784519/>