Lehigh University would like to submit Mycobacteriophage Kevin1 for QC. We accept all gaps and would like the following areas reviewed further.

We deleted the following genes gp16 (9959-10099), gp35 (26933-27547), and gp70 (40714-40896) because there was no homology with any other phages. These gene were on the opposing strand. We also added one gene gp69 (41506-41805), this gene is an HNH endonuclease present at the end of all other N cluster genomes.

There are three orphams contained in the Kevin1 genome. gp30 (24660-25904), we have called this as an AAA-ATPase based on HHpred homology. Gp31 (25992-26315), there is very weak homology to Xeno gp30, SkinnyPete gp28, Charlie gp31. These genes are called the HicB antitoxin but Kevin1 only contains the central region of this protein. gp43 (30885-31160) is the final orpham in the Kevin1 genome.

The BLAST data saved in DNAmaster for gp3 is not correct, on phagesdb/genbank the BLASTp is Q1:S1 with Butters and MichellemyBelle.

We have called gp7-12 as head-to-tail connector proteins based on BLASTp data for newer N cluster phages (PhancyPhin, Xerxes, Pipsqueak).

Gp14 (9056-9586) and gp15 (9056-9962) are a +1 translational frameshift.

The following genes should be investigated for functional gene calls. gp55 (35745-35945) has homology with Phayonce gp53, where no function is called. HHpred data supports a functional call of AAA-ATPase. We have not called this but think it should be investigated further. Gp64 (38938-39537) currently has no functional call, there is an HHpred function as G39P, replisome organizer, gene 39; helical, bipartite, natively unfolded domain, relication; 2.40A {Bacillus phage SPP1} probab=98.61 E-value 5.6e-08. This function has never been called in any mycobacteriophages but is worth investigating further. Gp29 (24131-24568) is called a minor tail protein in Panchino, it is not called in any other N cluster phages,it also does not have any HHpred homology. This should be investigated as a true function.