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Beaglebox: a Mycobacterium smegmatis phage isolated from a dog kennel near IUP

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Beaglebox is a B1 subcluster lytic M. smegmatis phage that was isolated at a former dog kennel near the campus of Indiana University of Pennsylvania (isolated by K. Murphy, H. Kepple, B. Vought in 2017). It has a Siphoviridae morphotype and creates small clear plaques with fuzzy edges. The genome consists of 68,418 bp with a 66.5% GC content, coding for 103 genes predicted by auto-annotation. During our annotation, we deleted 5 genes (gp3, 10, 45, 78, 81) due to lack of BLAST matches and poor or no coding potential. We also added 2 new genes between large gaps that had BLAST matches and coding potential. The first added gene was between gp11-12 and the second was between gp69-70. Beagle also had one orpham with 468 bp (gp58). Our final annotation showed that Beaglebox contained 100 total genes (all coding for proteins) with 49% of them being assigned functions. Although a holin gene is yet to be identified in this subcluster, we found that our gp16 partially matched holin in the Corynebacterium phage Juicebox (38% identity and E=1e-10). Further experimentation will be needed to confirm whether this is a true holin gene or not.