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Isolation and annotation of Damascus, a cluster EL phage isolated on Microbacterium paraoxydans

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Phage Damascus was isolated from soil in western Wisconsin, using *Microbacterium paraoxydans* as the isolation host. Damascus produces small, clear plaques at 30o C. It has Siphoviral morphology by TEM and an isometric head. Sequencing the Damascus genome revealed that the genome is 56,477 bp long with 85 protein-coding genes and no tRNA genes. Damascus is in cluster EL along with three other phages. DizzyRudy was also isolated on *M. paraoxydans*, while Camille and Count were isolated on *M. aerolatum*. Damascus shares 89% gene content with DizzyRudy, but only 68% and 41% gene content with Camille and Count, respectively. We are conducting host range experiments to determine whether Damascus can infect both species of *Microbacterium*. Cluster EL phages share several genes with phages in a wide range of clusters, including AM, AU, BI, CC, DJ, and FK. Shared genes span the genome and include a fused major capsid and protease, terminase, tape measure protein, minor tail proteins, and a DNA primase/polymerase. Phages in these clusters also contain several genes encoding membrane proteins in the center of the genome.