

P037 Viruses and plasmids of halophilic archaea and thermophilic bacteria share homologous virus cores
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Viruses have been demonstrated to form lineages across different domains of life and therefore it seems possible that viruses emerged before the last universal common ancestor of cells. Usually only the viral core (in the form of genome packaging ATPases and major capsid proteins) has retained its composition throughout the history of life. We have discovered a new virus core family that links together *Halobacterium* plasmid pHH205, *Haloarcula* virus SH1, tiny insert in of *Haloarcula* genome and *Thermus* specific thermophilic bacteriophages P23-77 and IN93. It is possible that these viruses could have mediated the horizontal gene transfer across different domains of life and thus we studied whether these virus cores diverged from each other after the separation of Archaea and Bacteria. The GC-content of *Halobacterium* and *Thermus* are almost identical (68 % and 69 %, respectively), thus it is speculative but also a possibility that these viruses have altered their hosts range partly due to similar host DNA-composition. Furthermore the SH1-like virus core lineage might be evolutionary related to another virus core family, previously denoted as Tecti-Adenovirus lineage. Analysis of these virus cores may supply important facts about the very early steps of life and therefore represent significant scientific value.