Isolation and characterization of a new crAss-like phage from the human gut

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Video Byte

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Abstract

CrAss-like phages are the most abundant family of bacteriophages in the human gut. Despite their abundance, only three types of crAss-like phages have been isolated in pure culture. Now, a new study reports the successful isolation of a new crAss-like phage, Φ crAss002. Researchers used fecal fermentation with antibiotics to select for gram-negative bacteria including *Bacteroides*, a favorite target of crAss-like phages. That led to the isolation of Φ crAss002, which infects *Bacteroides xylanisolvens*. Experiments showed that, despite being a lytic phage, Φ crAss002 did not form plaques on bacterial lawns or lyse liquid cultures of sensitive bacteria, even at high titers. Φ crAss002 and *B. xylanisolvens* can co-exist at high levels in co-cultures, which is consistent with their co-abundance in the human gut. This co-existence between phage and host is also found in the previously described Φ crAss001. While more research is needed to understand how such stable co-cultures form, the isolation and characterization of new crAss-like phages like this offers insight into the interactions between phagome, bacterial microbiome, and human host.