

CHARACTERISING THE COLONIC AND UPPER INTESTINAL VIROME IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

Arnau Vich Vila

UEG Week Vienna 2024

Presentation

Gut Microbiota

IBD

Immunology

October 14, 2024

This comprehensive virome study in 200 individuals shows significantly reduced viral diversity in IBD colonic samples compared with general population controls (FDR<0.05), with distinct viral signatures in the small intestine and disease-specific phage associations.

KEY POINTS

- Viral diversity was significantly lower in both Crohn's disease and ulcerative colitis colonic samples compared with general population controls, and even lower in upper intestinal samples compared to colonic samples (FDR<0.05).
- In IBD-UC, 83 out of 260 viral groups were absent in general population samples and 125 out of 302 general population viral groups were absent in IBD-UC; for IBD-CD these numbers were 79 out of 248 and 133 out of 302, respectively.
- The top viral groups positively associated with IBD-UC included an unknown phage group with predicted host *Parasutterella* spp., *Lactobacillus* phages, and *Lactococcus* phages; for IBD-CD, the same *Parasutterella* phage group and two other unknown phage groups with predicted hosts primarily *Enterocloster* and *Bacteroides* spp.
- Many viral groups differentially present in the IBD intestine infect bacteria often associated with gut health and significantly reduced in IBD patients, including phages with host *E.colteae*, a bacteria that metabolises bile acids.
- The small intestinal virome showed distinct clustering from colonic samples with enrichment of temperate phages and viruses that mainly infect *Escherichia*, *Streptococcus*, *Veillonella* and *Klebsiella* species.

- Using both bulk isolation and viral-like particle isolation methods identified over 8500 viruses, the majority novel, demonstrating the importance of combining targeted and non-targeted techniques to capture full virome diversity.

VIEW THIS CONTENT ON GUTFLIX

<https://gutflix.eu/search/d/8bd256a2-9112-11ef-9676-0242ac140004>



AI-generated summary

This summary was generated by an AI large language model based on the content transcript. It is for informational purposes only and should not be considered a substitute for clinical judgment. Always rely on your professional expertise and the full clinical context when making clinical decisions.