The Human Skin dsDNA Virome: Topographical and Temporal Diversity, Genetic Enrichment, and its Dynamic Associations with the Host Microbiome

Hannigan GD, Meisel JS, Tyldsley AS, Zheng Q, Hodkinson BP, SanMiguel AJ, Minot S, Bushman FD, Grice EA

Abstract

This collection contains protocols for the computational analysis performed in the paper "The Human Skin dsDNA Virome: Topographical and Temporal Diversity, Genetic Enrichment, and its Dynamic Associations with the Host Microbiome". Geoffrey Hannigan and Jacquelyn Meisel are graduate students in Dr. Elizabeth Grice's lab in the Department of Dermatology at the University of Pennsylvania.

Hannigan, Geoffrey D., et al. "The Human Skin Double-Stranded DNA Virome: Topographical and Temporal Diversity, Genetic Enrichment, and Dynamic Associations with the Host Microbiome." *mBio* 6.5 (2015): e01578-15.

Collection

☑ PROTOCOLS

1. Script P1: Pre-Processing Samples

CONTACT: Geoffrey Hannigan

2. Script P2: Contig Assembly

CONTACT: Geoffrey Hannigan

3. Script P3: Open Reading Frame Prediction

CONTACT: Geoffrey Hannigan

4. Script P4: Assigning Viral Taxonomy

CONTACT: Geoffrey Hannigan

5. [Script P5: Diversity](#)

CONTACT: [Geoffrey Hannigan](#)

6. [Script P6: HPyV Detection](#)

CONTACT: [Geoffrey Hannigan](#)

7. [Script P7: Assigning Whole Metagenome Taxonomy](#)

CONTACT: [Geoffrey Hannigan](#)

8. [Script P8: Phage Replication Cycle](#)

CONTACT: [Geoffrey Hannigan](#)

9. [Script P9: Phage-Bacteria Interaction Network](#)

CONTACT: [Geoffrey Hannigan](#)

10. [Script P10: CRISPR Identification](#)

CONTACT: [Geoffrey Hannigan](#)

11. [Script P11: Functional Analysis](#)

CONTACT: [Geoffrey Hannigan](#)

12. [Script P12: Antibiotic Resistance](#)

CONTACT: [Geoffrey Hannigan](#)

13. [Script R1: Virome Contig and Sequencing Statistics](#)

CONTACT: [Geoffrey Hannigan](#)

14. [Script R2: Whole Metagenome Contig and Sequencing Statistics](#)

CONTACT: [Geoffrey Hannigan](#)

15. [Script R3: Quality Control Statistics](#)

CONTACT: [Geoffrey Hannigan](#)

16. [Script R4: Virome Taxonomy](#)

CONTACT: [Geoffrey Hannigan](#)

17. [Script R5: Virome Alpha Diversity](#)

CONTACT: [Geoffrey Hannigan](#)

18. [Script R6: Virome Beta Diversity](#)

CONTACT: [Geoffrey Hannigan](#)

19. [Script R7: Intra and Inter Personal Dissimilarity](#)

CONTACT: [Geoffrey Hannigan](#)

20. [Script R8: Plotting Bacterial Taxonomy from MetaPhlan](#)

CONTACT: [Geoffrey Hannigan](#)

21. [Script R9: Plotting Microbial Taxonomy from MEGAN](#)

CONTACT: [Geoffrey Hannigan](#)

22. [Script R10: Whole Metagenome Beta Diversity](#)

CONTACT: [Geoffrey Hannigan](#)

23. [Script R11: Replication Cycle](#)

CONTACT: [Geoffrey Hannigan](#)

24. [Script R12: Functional Analysis](#)

CONTACT: [Geoffrey Hannigan](#)

25. [Script R13: OPF and AMG Analysis](#)

CONTACT: [Geoffrey Hannigan](#)

26. [Script R14: CARD Antibiotic Resistance Analysis](#)

CONTACT: [Geoffrey Hannigan](#)

27. [Script R15: CoNet Analysis - Formatting Relative Abundance Files](#)

CONTACT: [Geoffrey Hannigan](#)

28. [Script R16: CRISPR Analysis](#)

CONTACT: [Geoffrey Hannigan](#)