



THE UNIVERSITY OF TEXAS

MD Anderson
~~Cancer Center~~

Making Cancer History®

PRIME-TR
BUILD · INNOVATE · CURE

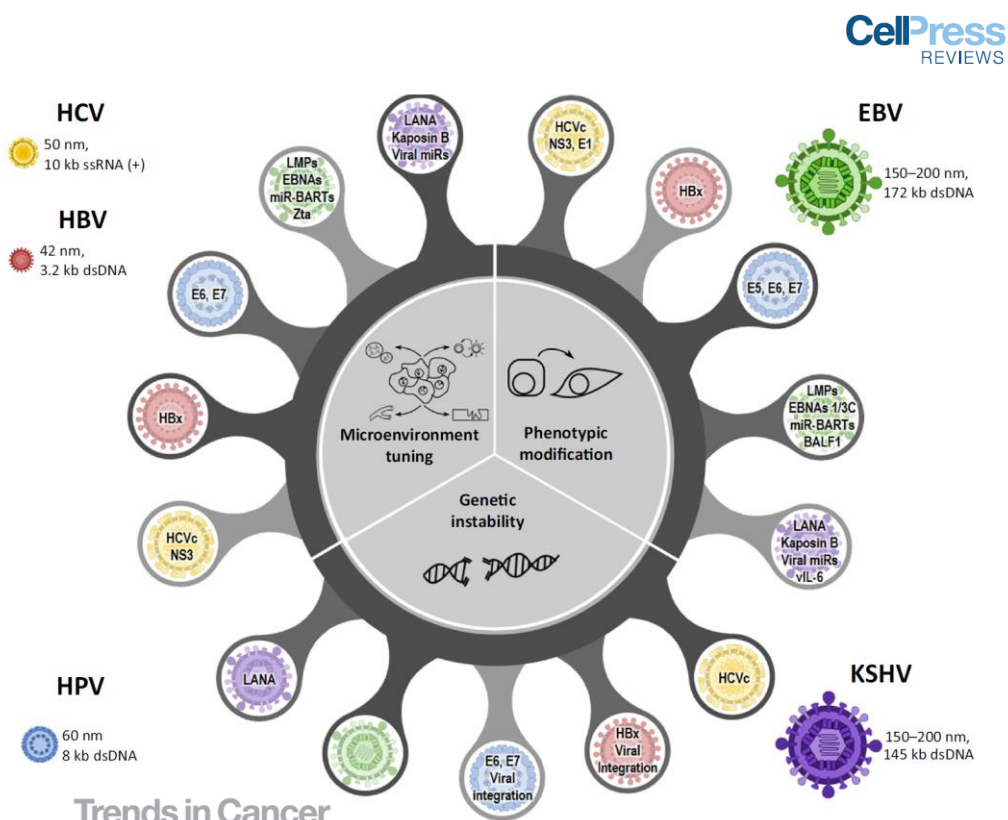
CANCER MOONSHOT

VirMAP for Cancer: Characterization of the Intratumoral Virome in Virally- Associated Cancers and a Resource for Investigators

Y. David Seo

Leading Edge of Cancer Symposium Abstract
October 2022

Current landscape of viral associations in cancer



Trends in Cancer

Müller-Coan et al., July 2018

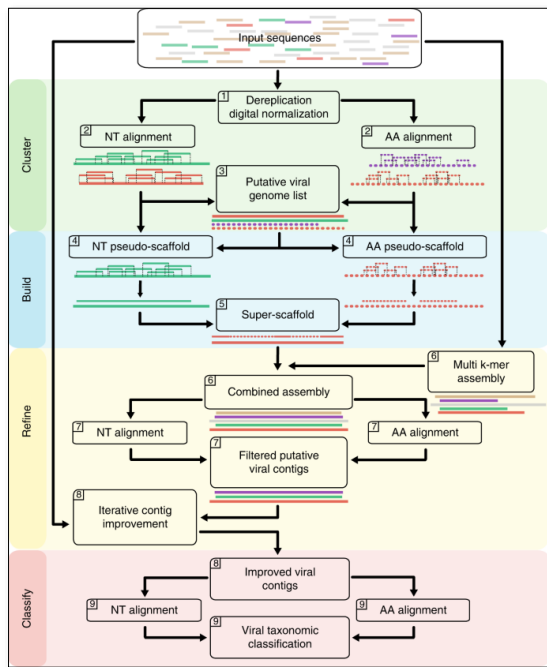
doi.org/10.1016/j.trecan.2018.04.006

*Known association
of common viruses
in oncogenesis*

*Effects of oncoviruses
on cancer progression
and metastasis*

**True associations
between intratumoral
viral signatures
and clinical outcomes?**

VirMAP – A powerful tool for cancer virome interrogation



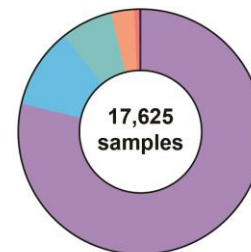
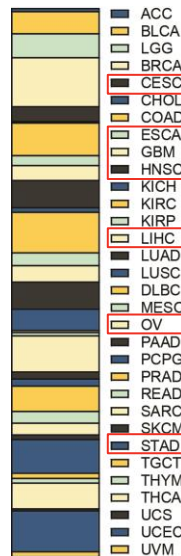
VIRMAP FOR CANCER

Hallmarks of the
VirMAP algorithm

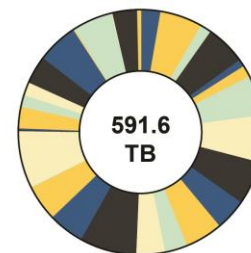
Viral genomic reconstruction

*Accurate taxonomic
classifications*

Quantitative viral signals



- Primary Tumor
- Blood Derived Normal
- Solid Tissue Normal
- Metastatic
- Recurrent Tumor
- Additional

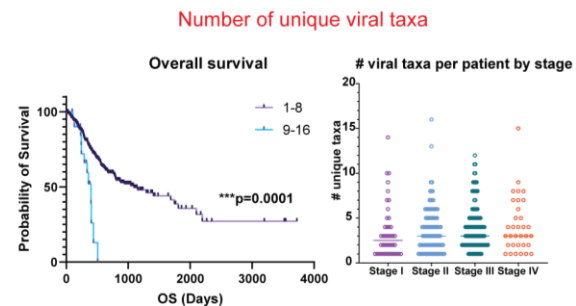
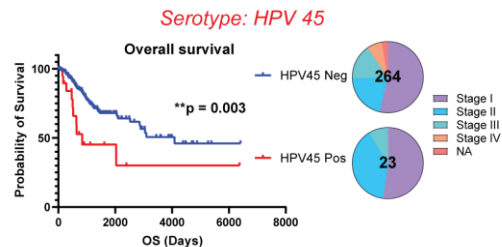
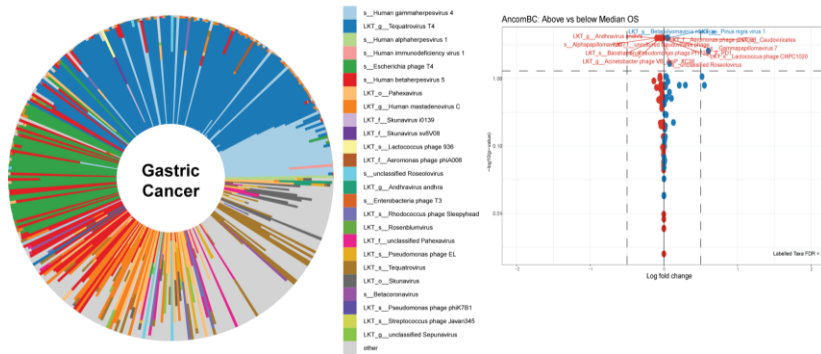
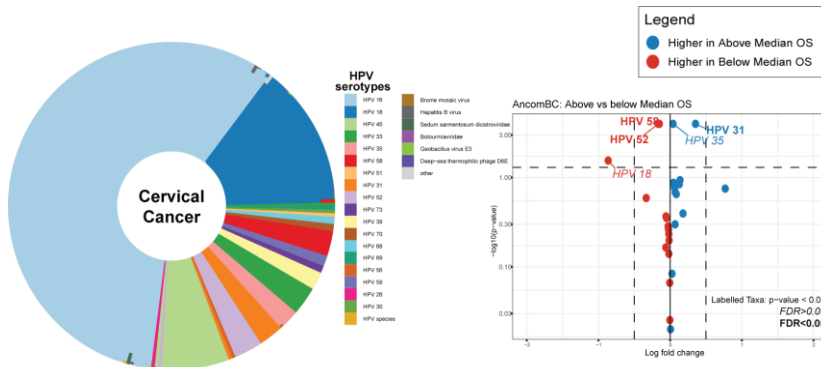


TCGA

NIH NATIONAL CANCER INSTITUTE

RNA Sequencing
Whole genome sequencing
Whole exome sequencing

Species	VirMAP >99.9% resolved to species level (%)	Kraken Total viral reads (%)	Mapped to genus (%)
ESCA	~0.0015	~0.0012	~0.0008
HN5C	~0.0015	~0.0022	~0.0008
STAD	~0.0015	~0.0020	~0.0010
LIHC	~0.0095	~0.0020	~0.0015
CESC	~0.0125	~0.0040	~0.0038



CECSC: Cervical; **HNSC:** Head and Neck; **STAD:** Stomach; **ESCA:** Esophageal; **LIHC:** HCC