May 8th, 10:30 AM - 12:00 PM

A Pig Model of the Human Gastro-intestinal Tract

Giovanni Widmer
Tufts Cummings School of Veterinary Medicine

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COLLABORATIVE RESEARCH OPPORTUNITIES WITH TUFTS CUMMINGS SCHOOL OF VETERINARY MEDICINE (TCSVM)

Moderator: Dr. Sawkat Anwer, PhD, DMVH, Tufts Cummings School of Veterinary Medicine (TCSVM)

Presenter: Dr. Giovanni Widmer, PhD, TCSVM
16S amplicon sequencing

V1V2

V6

V6: Illumina HiSeq2000
100-nt single-end sequencing

V1V2: Illumina HiSeq2500
150-nt single-end sequencing
16S rRNA PCR strategy

**Primary PCR V6**
- **ADAPTOR**
- **ACACTCTTTCCCTACACGACGCTCTTACACGAC**
- N60
- **AGGTGNTGCATGGCTGTCGAGATCGGAAGAGCACACGTCTGAACTCCAGTCACNNNNNN**
- **ADAPT**
- ** cust. sequencing primer **
- 972–990
- 1051–1069

**Secondary PCR V6**
- **ADAPTOR**
- **ACACTCTTTCCCTACACGACGCTCTTACACGAC**
- N312
- **ACTCCTACGGGAGGCAGCAGATCGGAAGAGCACACGTCTGAACTCCAGTCACNNNNNN**
- **ADAPT**
- **barcode read primer**
- 7–27
- 338–356

**Secondary PCR V1V2**
- **ADAPTOR**
- **ACACTCTTTCCCTACACGACGCTCTTACACGAC**
- N312
- **ACTCCTACGGGAGGCAGCAGATCGGAAGAGCACACGTCTGAACTCCAGTCAC**
- **NNNNN**
- **ADAPT**
- **secondary PCR V1V2 with universal barcode primer**
- 7–27
- 338–356
fecal transplants: human -> pig
taxonomy

experiment 1
adult-Similac

experiment 2
infant-Similac

experiment 3
adult-solid

phyllum-level classification (count)
age (days)

Actinobacteria
Bacteroidetes
Firmicutes
Tenericutes
Proteobacteria
unclassified
Verrucomicrobia
fecal transplant: PCoA based on Unifrac distance

numbers indicate day post-inoculation
fecal transplant: effect of diet

experiment 1
adult-Similac

experiment 2
infant-Similac

experiment 3
adult-solid
ACKNOWLEDGMENTS

Quanshun Zhang          sample prep, animal experiments
Alex Walker             DNA extraction, library prep
Kevin Huynh             DNA extraction, library prep
Rachel Sora             animal care
Patty Boucher           animal care
Albert Tai              Tufts Genomics Core
Kip Bodi                Tufts Genomics Core
Huyen Bum Kim           data analysis
Durwood Marshall        UIT support