

Metagenomic Reads

Read 1:
 Frame 1:
 Fragment 1:
 MRTFHIGGAA...

...

Read 5928:
 Frame 2:
 Fragment 1:
 ...GTLTMRTFHIGGAA...

...

Read 9801:
 Frame 1:
 Fragment 1:
 ...GTLTMRTFHIGGAASRAA...

Frame 3:
 Fragment 1:
 ...SIQAQVINIL....

...

Read 9924:
 Frame 6:
 Fragment 9:
 ...SIQAQVINIL...

k-mer
 Gene ation
 & Indexing

Metagenomic k-mer Index

Term	URI List
...	
GTLTMRTFHI	[R5928F2F1, R9801F1F1]
...	
LTMRTFHIGG	[R1F1F1, R5928F2F1, R9801F1F1]
...	
MRTFHIGGAA	[R5928F2F1, R9801F1F1]
...	

Phylogenetic Signature Assignment List

Term	Node
GTLTMRTFHI	I0: Bacteria
LTMRTFHIGG	I2: Proteobacteria
MRTFHIGGAA	I3: β/γ -Proteo- Bacteria
SIQAQVINIL	I1

Genomic Fragment List

Signature
 Search

URI	Node List
R1F1F1	[I3]
R5928F2F1	[I0, I2, I3]
R9801F1F1	[I0, I2, I3]
R9801F3F1	[I1]
R9924F1F1	[I1]

Greatest
 Common
 Descendant

Read	Node
1	I3
5928	I3
9801	I0*
9924	I1

Metagenomic Read
 Phylogeny Assignments

Phylogenetic Tree

