

- Announcements
- Lab Quiz
- Pre-lab Lecture
 - ❖ Hey remember microsporidia
 - ❖ Phylogenetics overview
 - ❖ Today in Lab: M1D7

Announcements

- Discussion of previous FNT: schematic, results, figure
 - schematic: great start! highlight unique elements and big picture *visual for key stuff*
 - results opening: nicely done! briefly recap motivation, specify samples
 - results outline: sustain clear narrative, modulate detail
 - figure: good work! review pre-lab notes as needed.
 - figure text: good start. review scientific writing guidelines: motivation-complete interpretation-conclusion
- BE Writing lab has opened its doors!
 - 56-205, 7-9 pm, Sun-Thu (and by appt)
 - welcome event Monday in 32-124, 7-8 or 8-9 pm → *sophomores* meet mentor
- Journal club next time: meet in **16-336 by 1:05 sharp**

(results)

Microsporidia primer analysis plan

Lane	Sample (X μ L)	Lane	Sample (Y μ L)
1	Group 1, sample 1	6	V1-PMP2, sample 2
2	Group 1, sample 2	7	V1-PMP2, sample 3
3	Group 1, sample 3	8	Group 2, sample 1
4	DNA ladder (load 10 μ L)	9	Group 2, sample 2
5	V1-PMP2, sample 1	10	Group 2, sample 2

2 groups plus a reference

Gel number	Reference samples	Group 1	Group 2
T/R 1	Specificity (VC, EH, mixture)	Red	Orange
T/R 2	Specificity (VC, EH, mixture)	Blue	Purple
T/R 3	Sensitivity (VC, lo, mid, hi)	Yellow	Green
T/R 4	Sensitivity (VC, lo, mid, hi)	Pink	Plat runs W/F Red!
W/F 1	Specificity (VC, EH, mixture)	Orange	Green
W/F 2	Specificity (VC, EH, mixture)	Blue	Pink
W/F 3	Sensitivity (EH, lo, mid, hi)	Yellow	Purple
W/F 4	Sensitivity (EH, lo, mid, hi)	Platinum	Red runs T/R Platinum!

matched w/ right group

* review expected size; compare band intensities

Phylogenetics

terminal nodes
= data!

inference

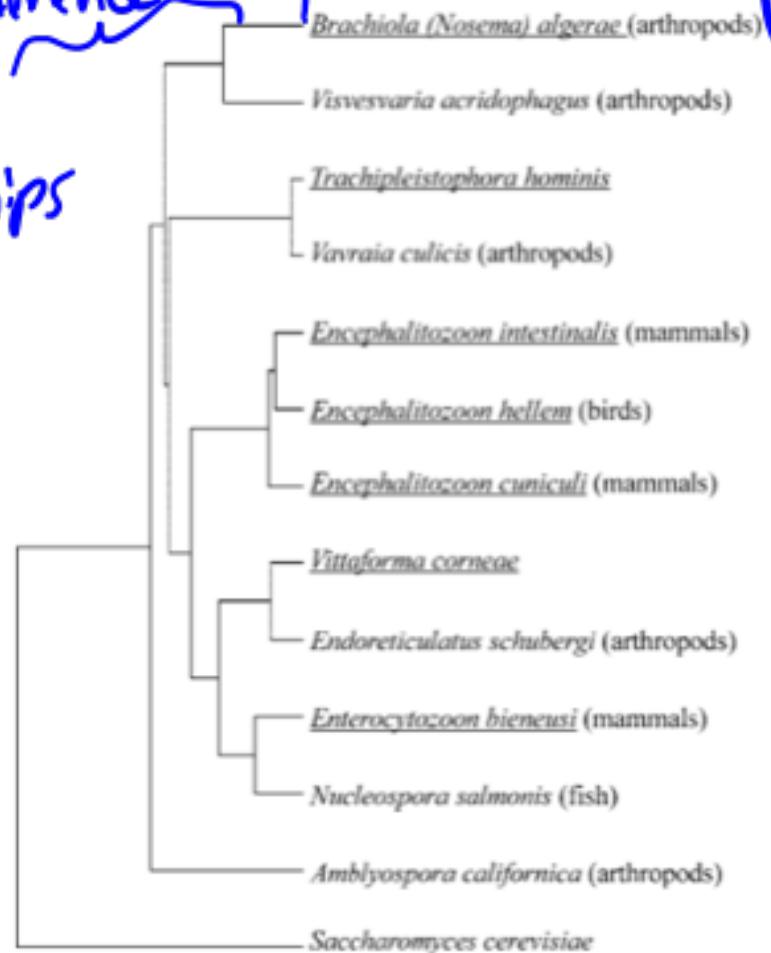
- Purpose

infer evolutionary relationships
based on a given metric
(sequence similarity)



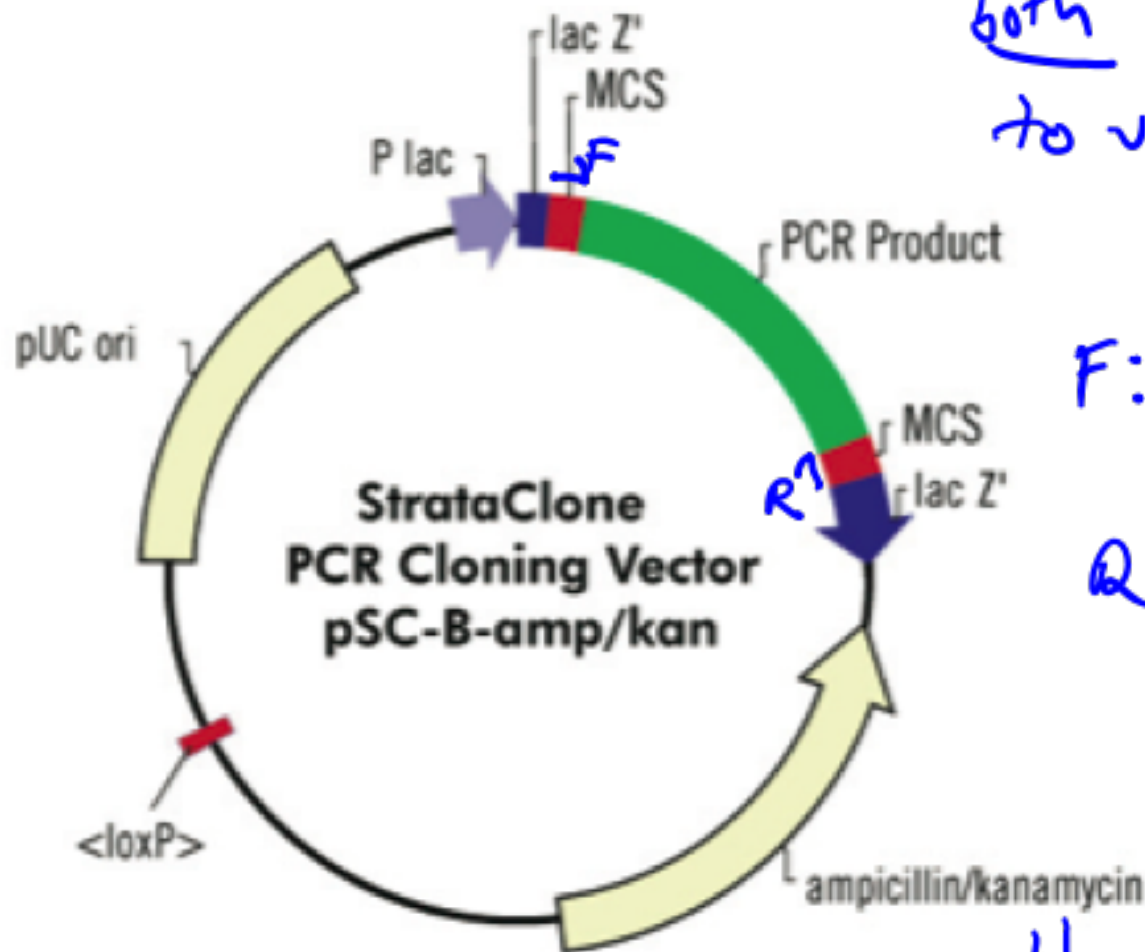
connections to other
areas of interest

- Reading a tree



→ 10 substitutions per 100 residues

Sequencing primer topology



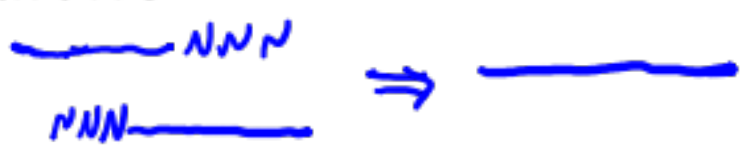
both primers are equal
to vector MCS

F: reads as coding
strand

R: reads as
template strand
reverse ↓ complement!

blunt → either orientation

Today in Lab (M1D7)

- Load microsporidia gels
 - take careful look at PCR sample table and gel lanes!
- Bird microbiome analysis: alone
 - trim sequences *and combine* 
 - identify closest species
- Bird microbiome analysis: with ### partner
 - align sequences for a given gull sample
 - create a phylogenetic tree
 - do with TR half of sample for now *save for WFE to add to*
- Lots of file posting along the way!