

Transcriptome Assembly

Lecture 24
Oct 28, 2016

Announcements

TRANSCRIPTOME ASSEMBLY

What is this?

TRANSCRIPTOME ASSEMBLY

Why easier than genome assembly?

TRANSCRIPTOME ASSEMBLY

Why harder than genome assembly?

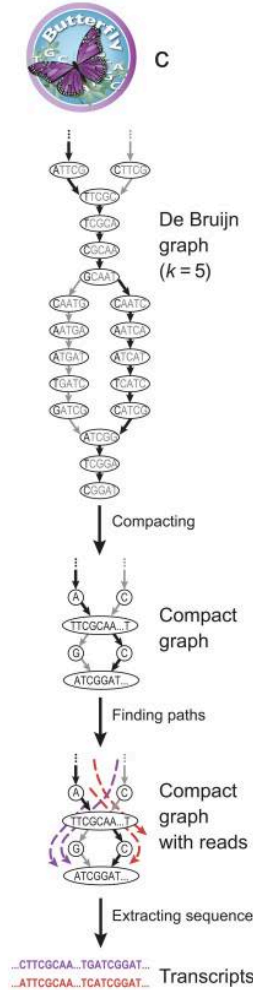
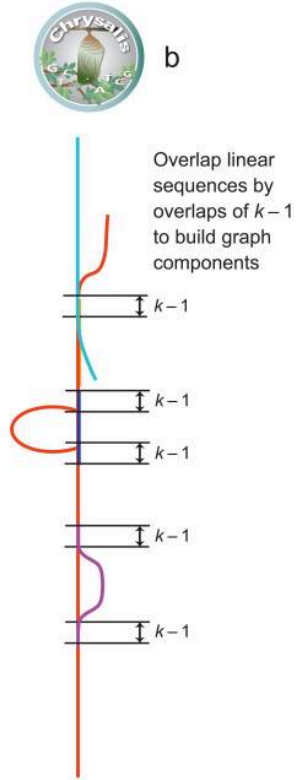
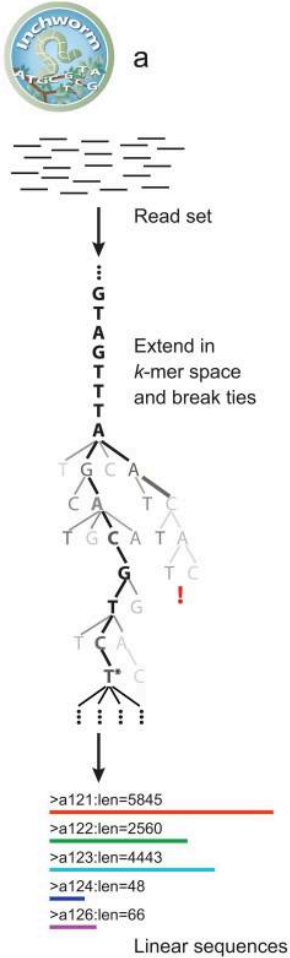
TRANSCRIPTOME ASSEMBLY

The steps:

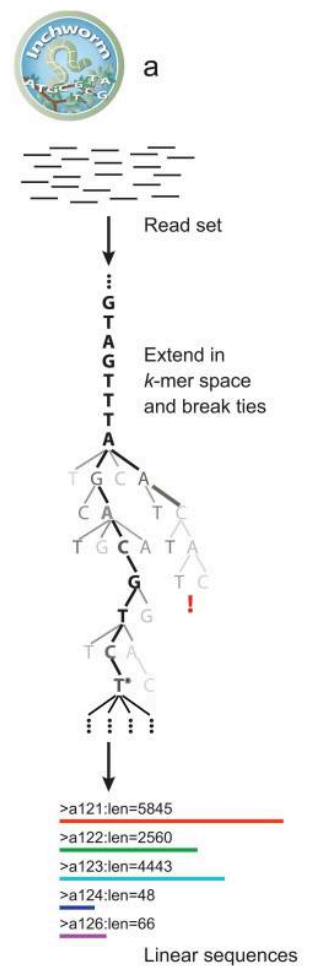
<http://oyster-river-protocol.readthedocs.io/en/v2/>

TRANSCRIPTOME ASSEMBLY

Trinity



TRANSCRIPTOME ASSEMBLY

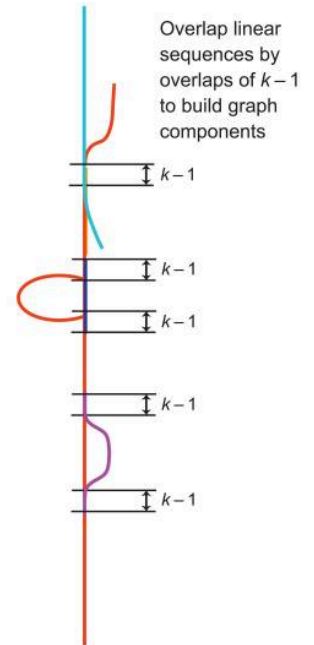


TRANSCRIPTOME ASSEMBLY

Trinity



b

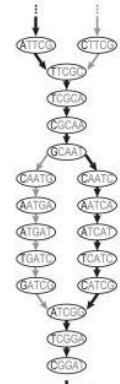


TRANSCRIPTOME ASSEMBLY

Trinity

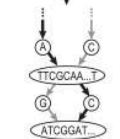


C



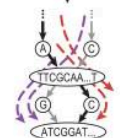
De Bruijn
graph
($k = 5$)

Compacting



Compact
graph

Finding paths



Compact
graph
with reads

Extracting sequences

...CTTCGCAA_TGATCGGAT...
...ATTGCGAA_TCATCGGAT...

Transcripts

TRANSCRIPTOME ASSEMBLY

<http://www.broadinstitute.org/videos/trinity-how-it-works>