Differential Expression & Alternative Splicing

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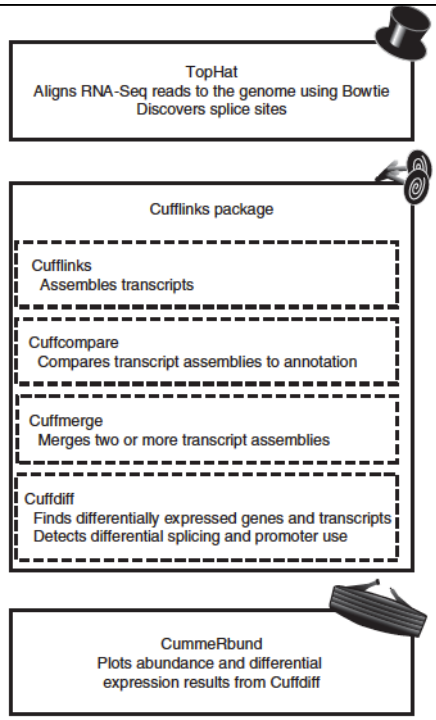
http://goo.gl/siWOr



Trapnell 2012, Nature Protocols

Samples

Q W M

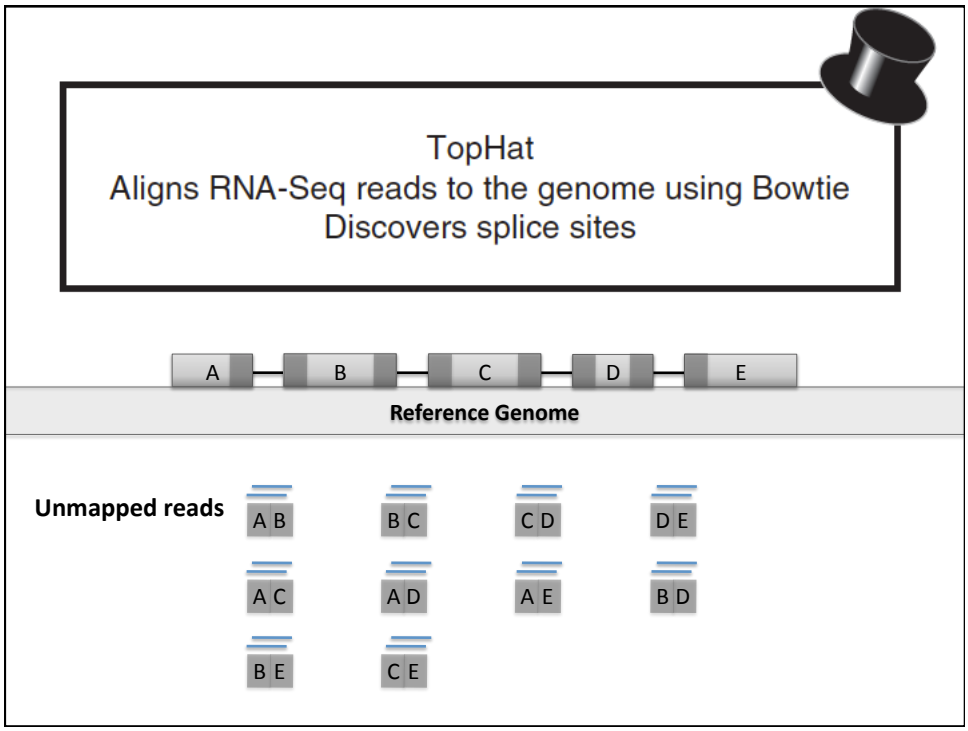
Pool of 4 Pool of 200 Pool of 5

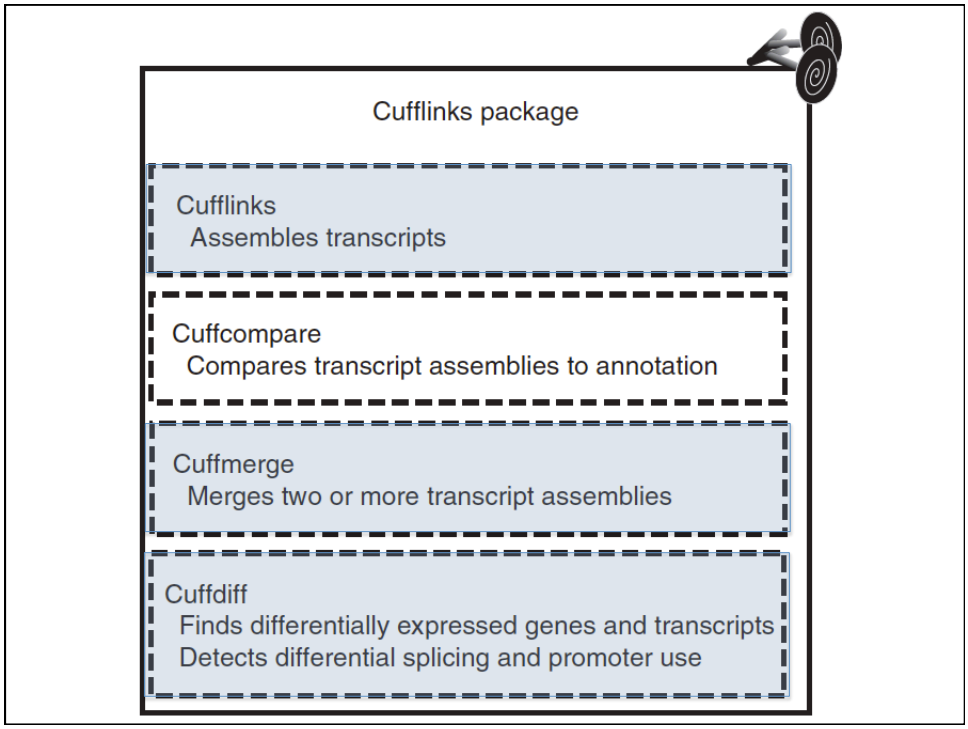
4 replicates of each

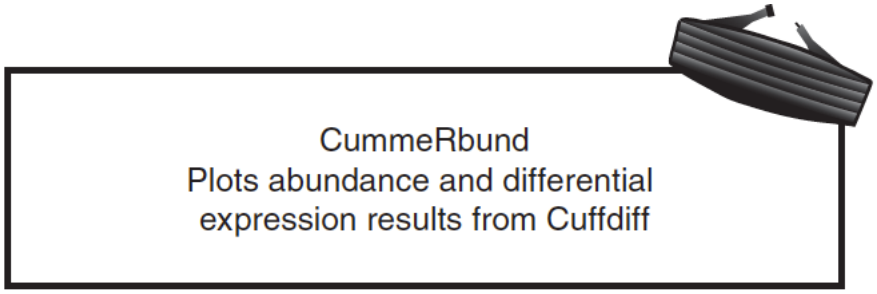
TopHat
Aligns RNA-Seq reads to the genome using Bowtie
Discovers splice sites

Reference Genome

Unmapped reads


TopHat
Aligns RNA-Seq reads to the genome using Bowtie
Discovers splice sites
A
B
C
D
E
Reference Genome
Unmapped reads
A B
B C
C D
D E
A C
A D
A E
B D
B E
C E


Cufflinks package
Cufflinks
Assembles transcripts
Cuffcompare
Compares transcript assemblies to annotation
Cuffmerge
Merges two or more transcript assemblies
Cuffdiff
Finds differentially expressed genes and transcripts
Detects differential splicing and promoter use


CummeRbund
Plots abundance and differential
expression results from Cuffdiff