New Storie About ncRNAs: Antisense Transcripts

Andrea Tanzer

Institute for Theoretical Chemistry
Univ.Vienna, Austria
at@tbi.univie.ac.at

The TBI Seminar, Bled 2006

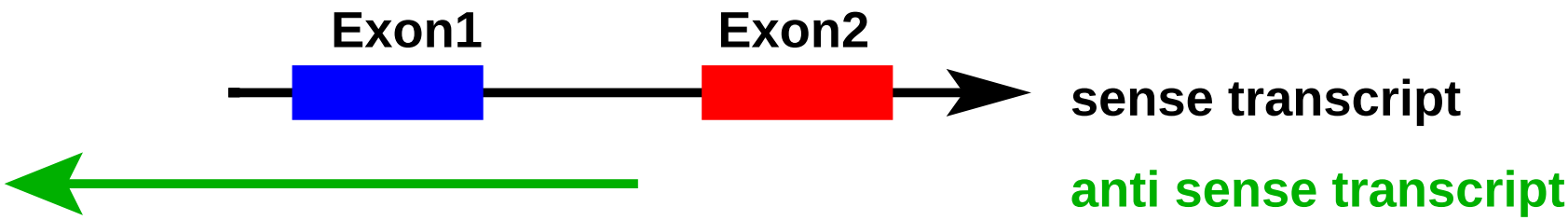
Outline

Outline

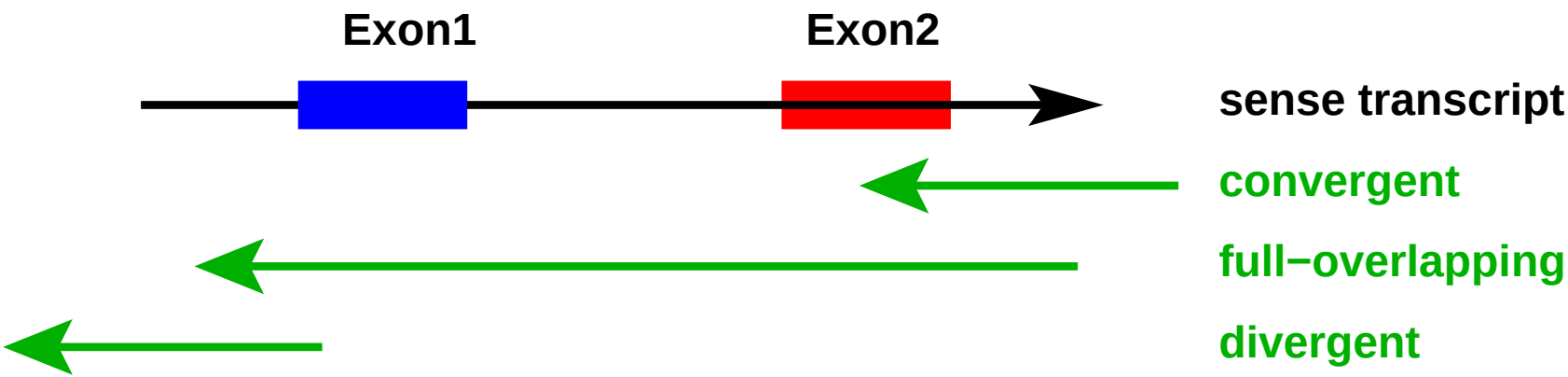
nothing.

Outline

What Is An asTC



Classes of AS-TC: *cis*



- convergent
- full-overlapping
- divergent

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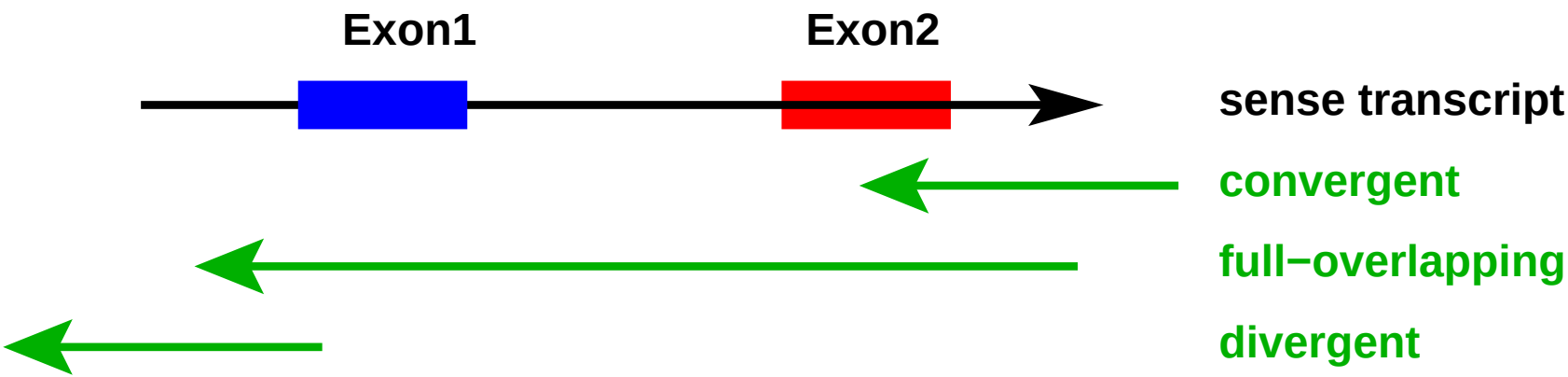

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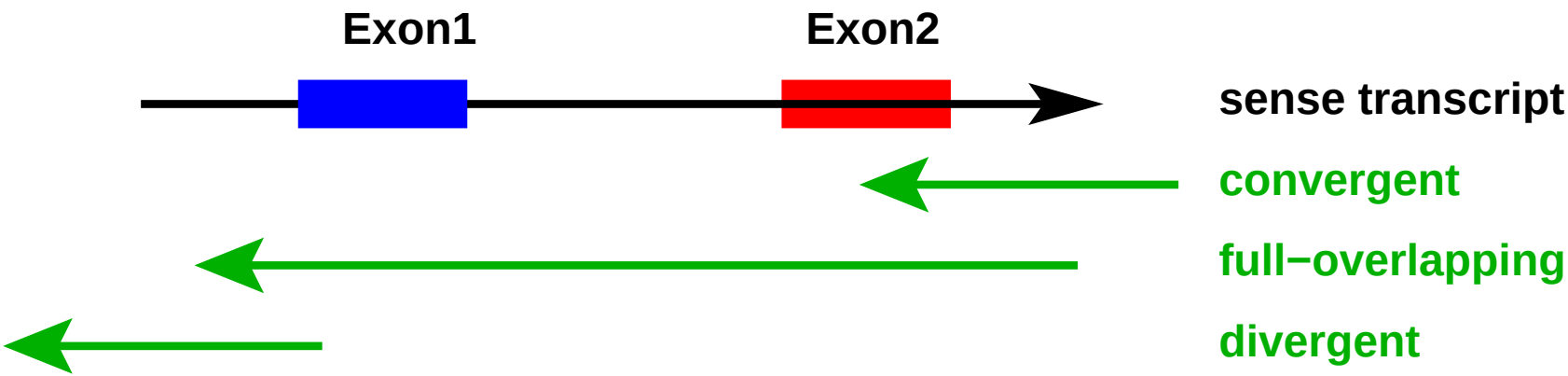

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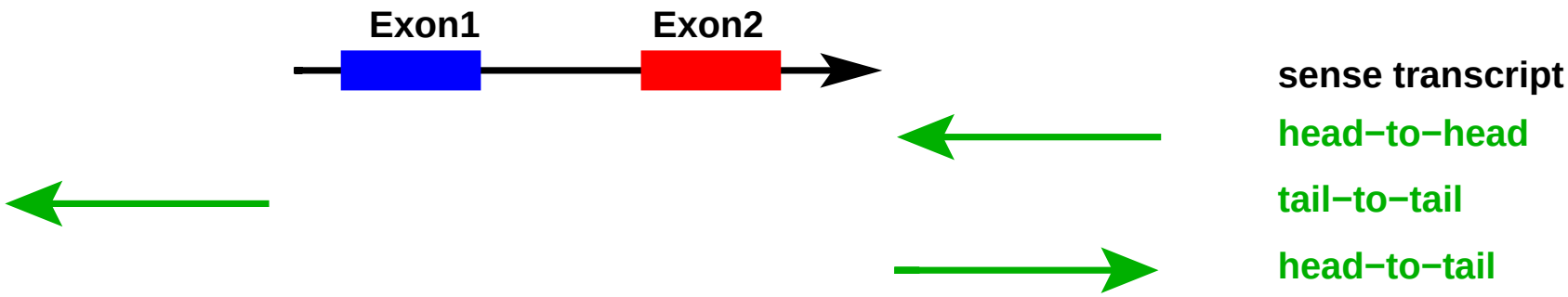
Classes of AS-TC: *trans*



- head-to-head
- tail-to-tail
- head-to-tail

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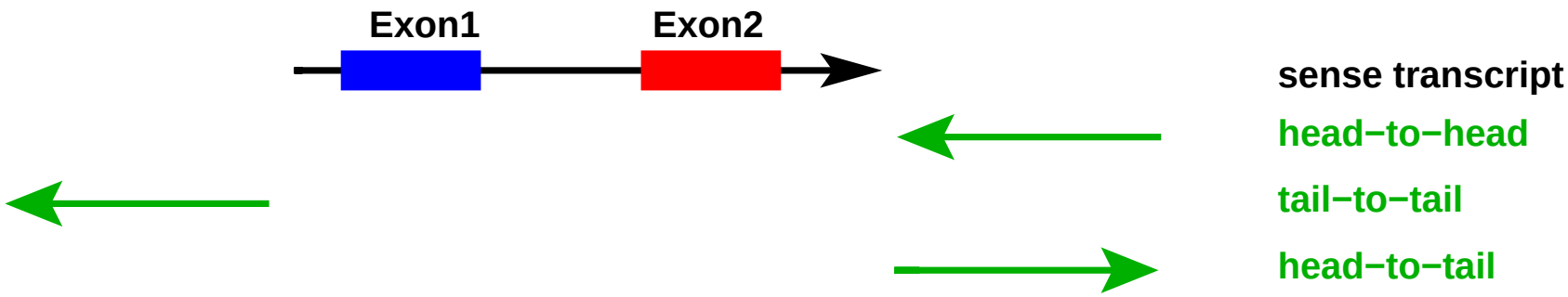

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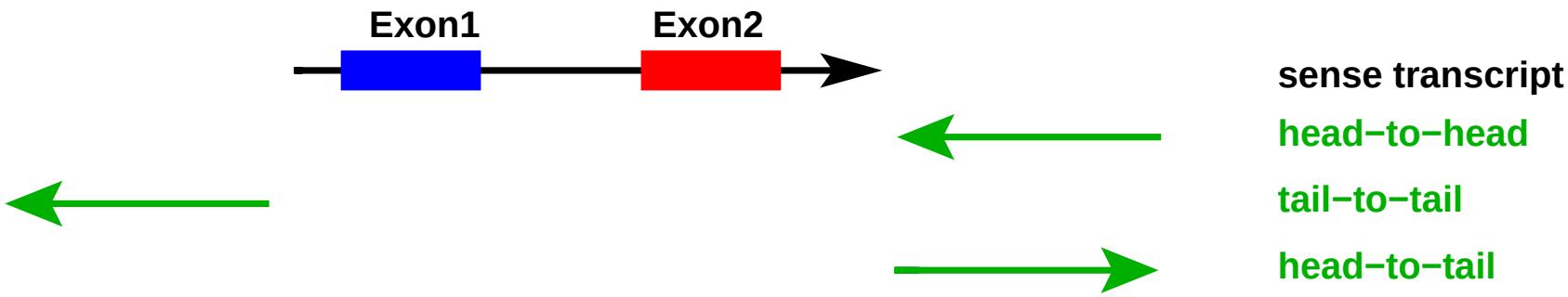

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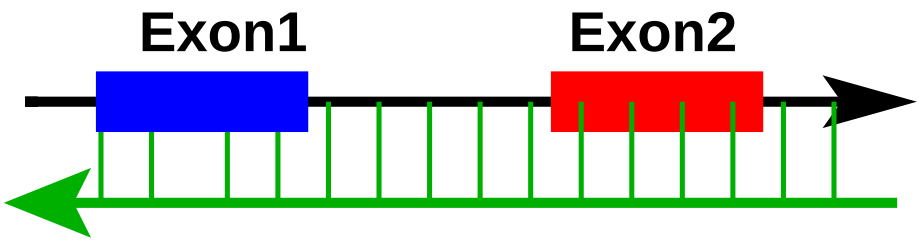
Perfect Duplexes



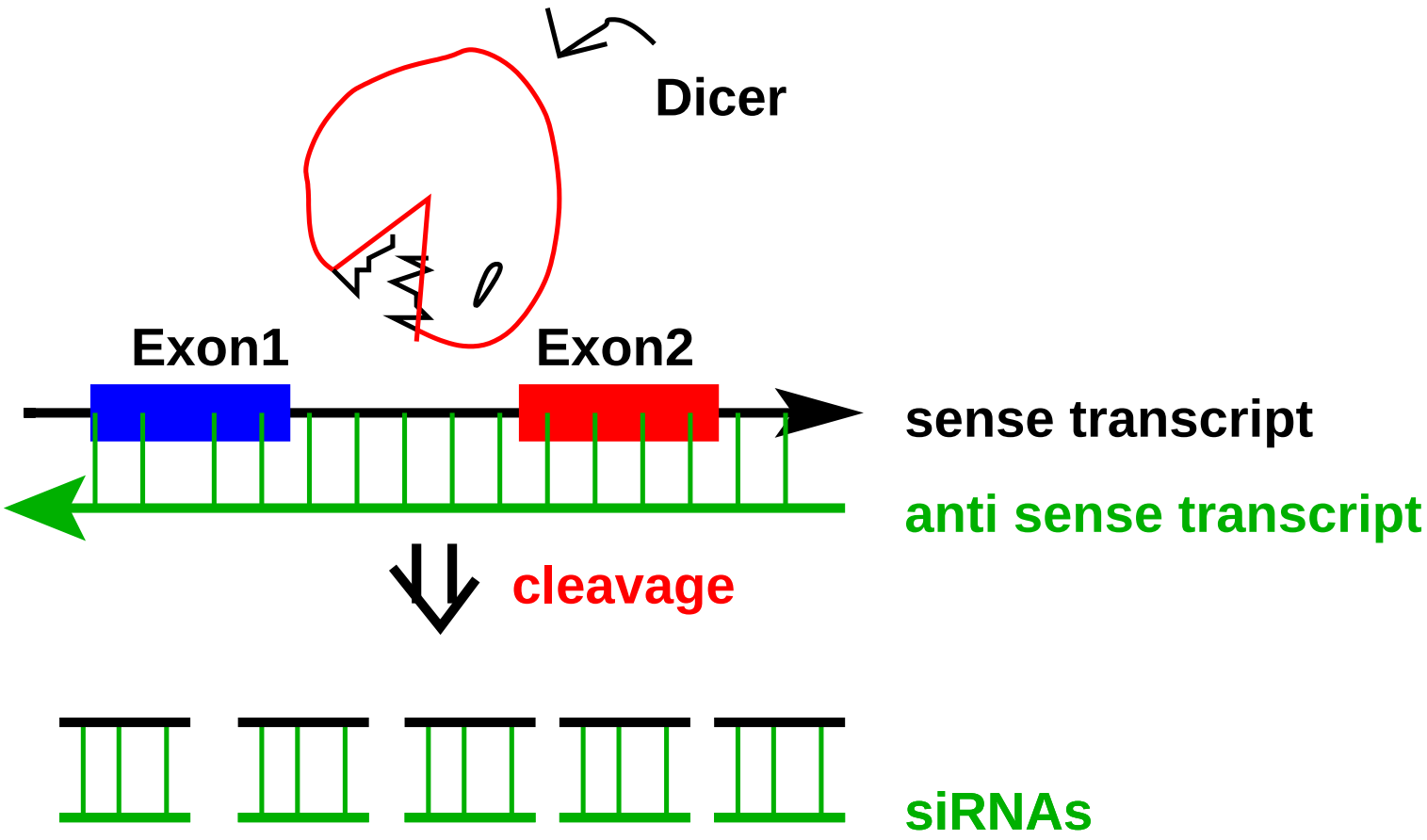
sense transcript

anti sense transcript

Again: is there some connection to microRNAs?

possibly maybe.

Degradation of S-AS Duplex



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What are hox genes?

- transcription factors
- embryonic development
- anterio-posterior axis
- organized in clusters

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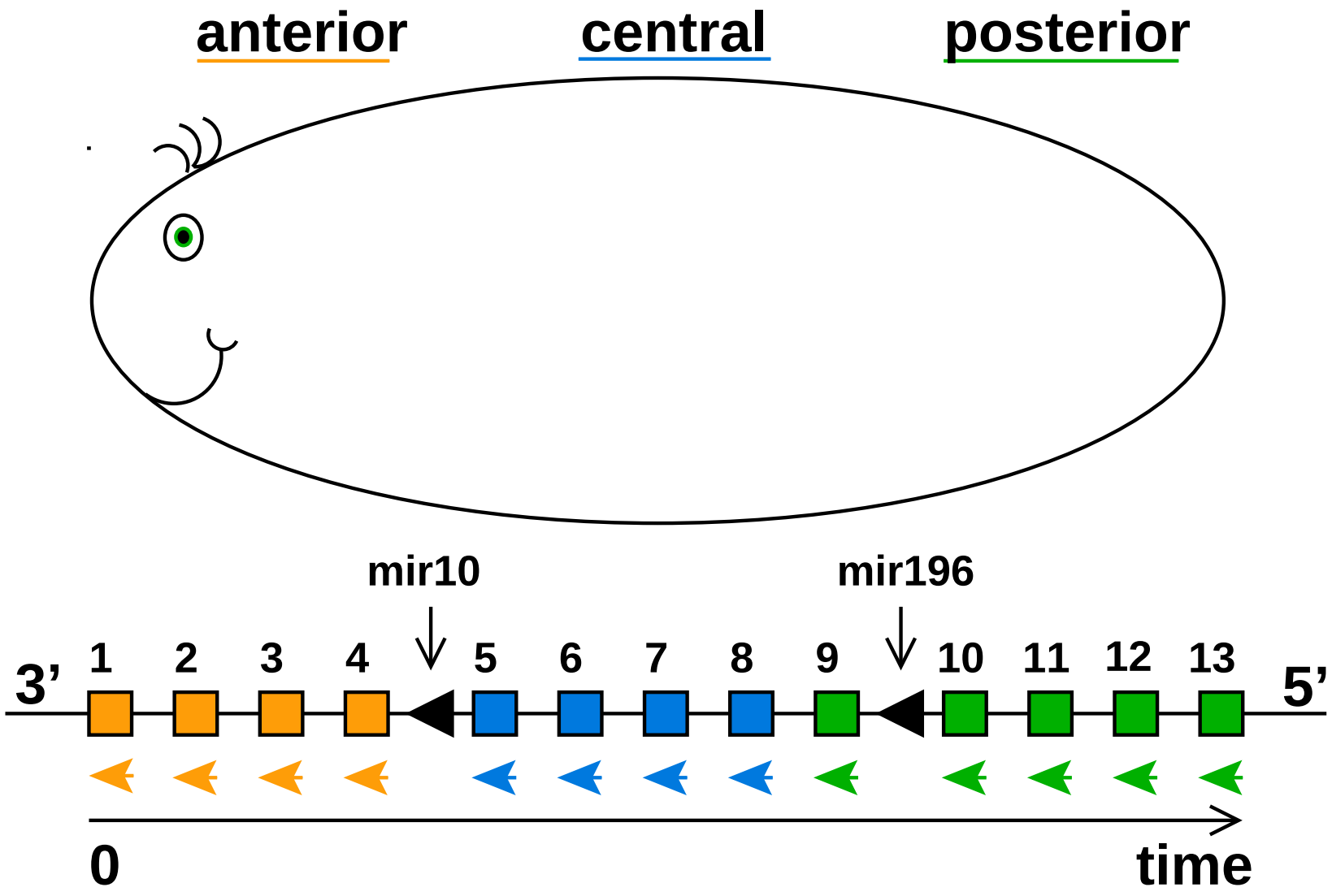
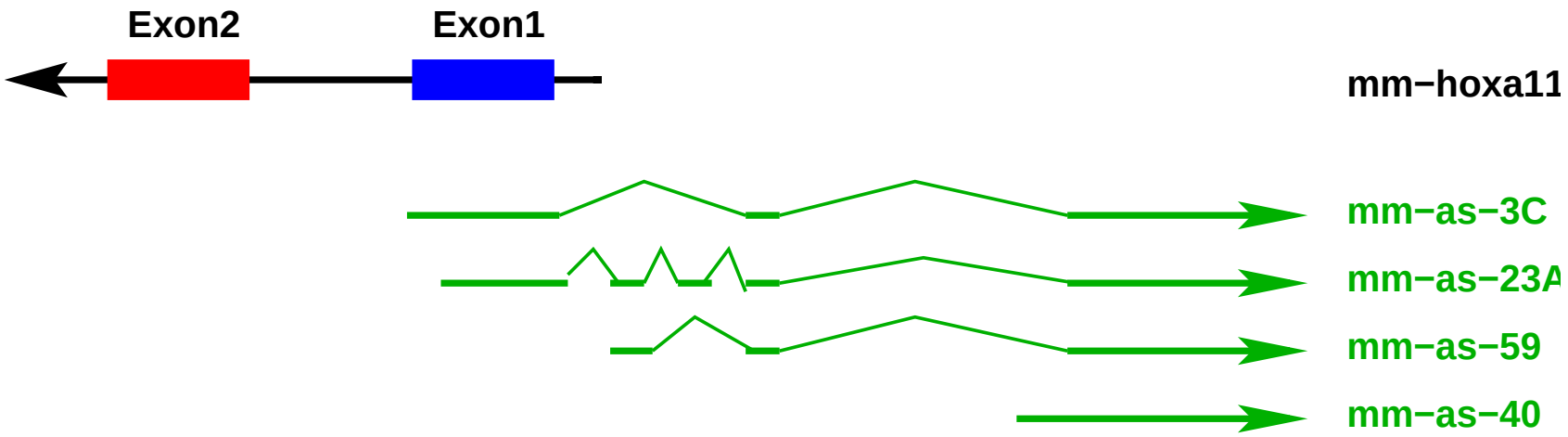
Genomic Organisation of HOX Genes



Outline

HoxA11 asTC: head-to-head



Known Functions of Hoxa11

- during embryogenesis:
  differentiation of limbs
- during embryogenesis:
  differentiation of Müllerian duct
  $\Rightarrow$ uterus development
- during female reproductive cycle:
  differentiation of endometrium
  $\Rightarrow$ embedding of egg

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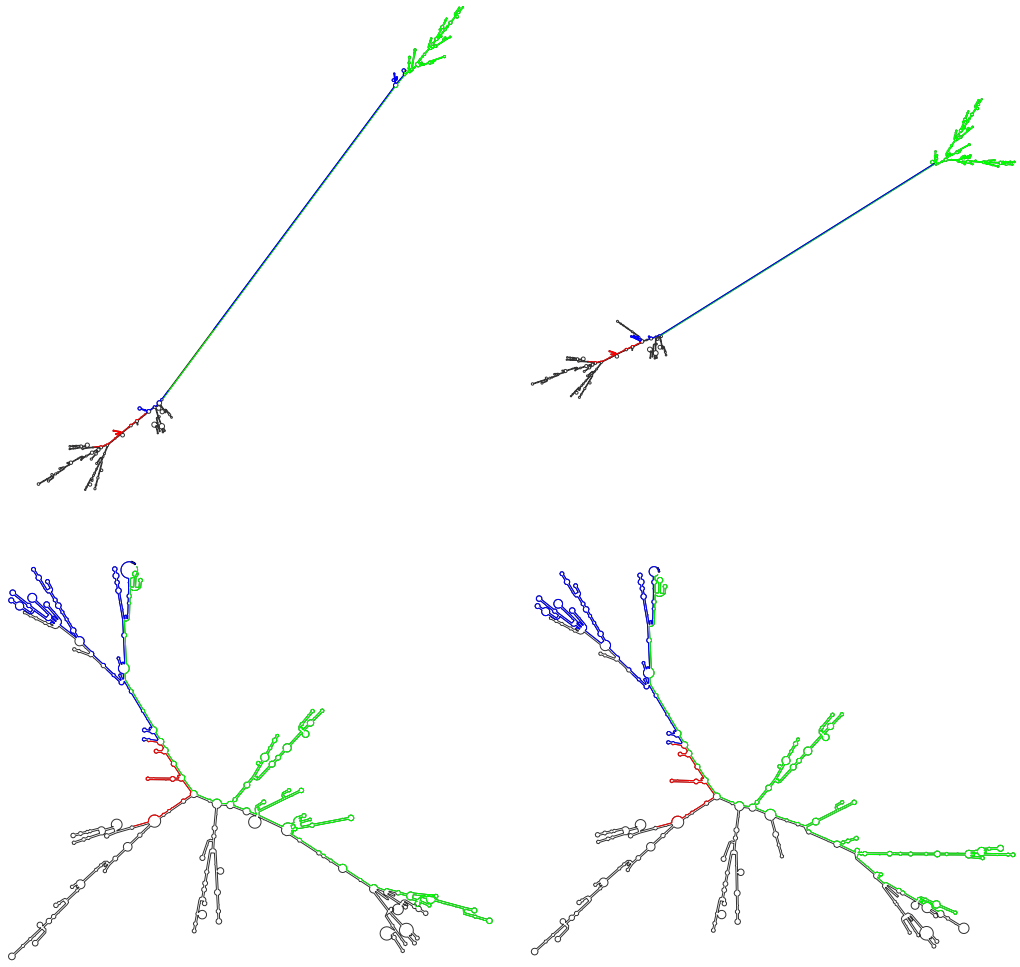
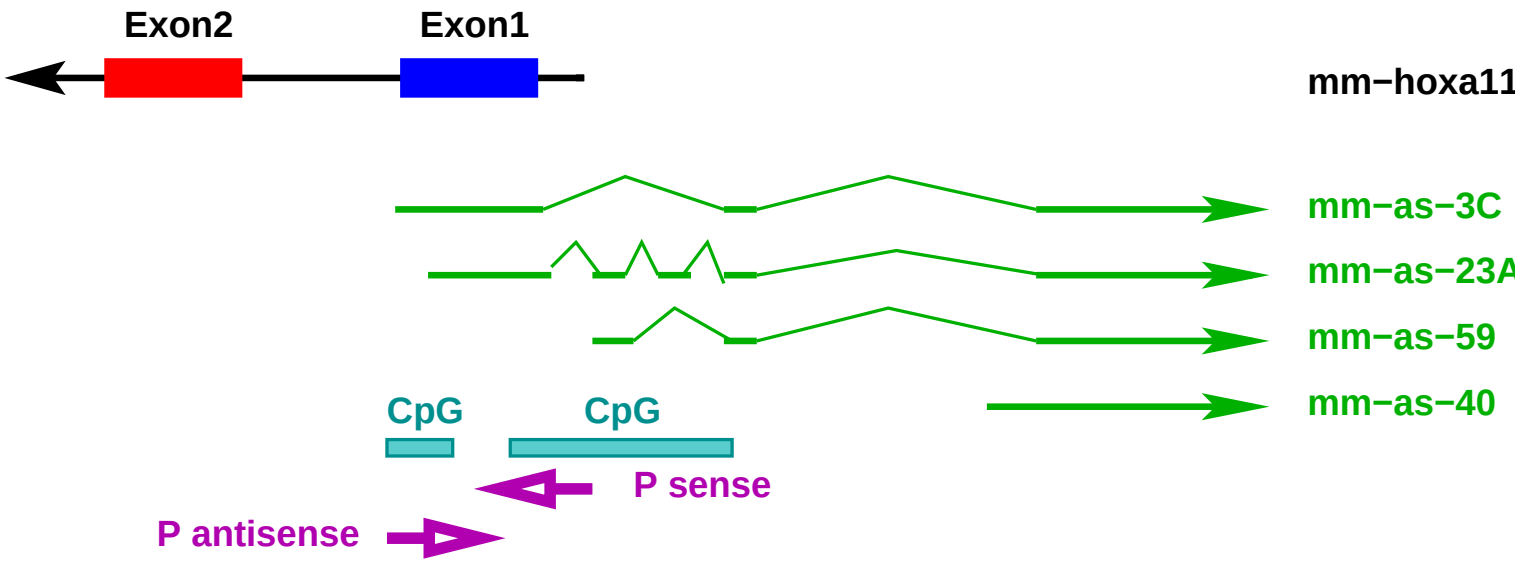
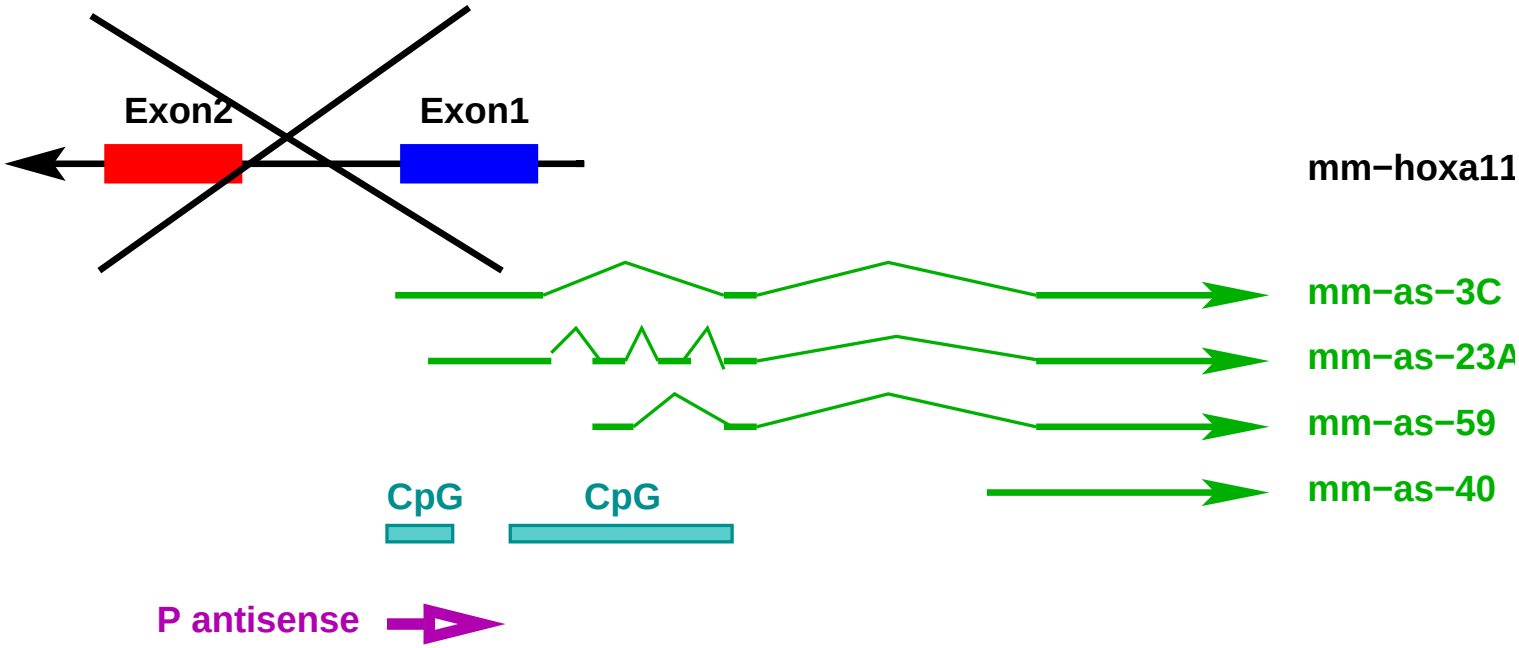
No Interaction with hoxa11?



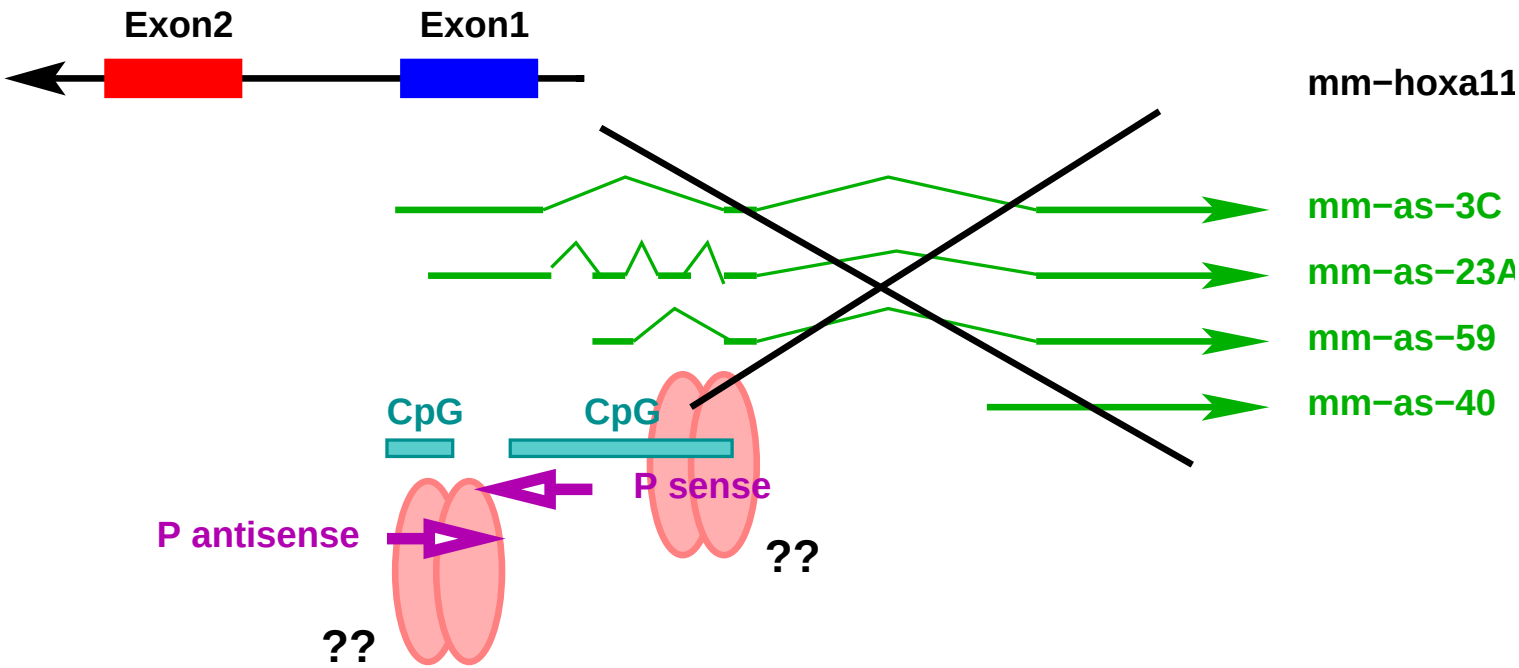
Predicted: Bidirectional Promoter



Default: Hoxa11AS Transcription?



Progesterone Induced: Hoxa11 Transcription?



Summary

- regulation of gene expression
- most are ncRNAs
- asTC in plants: PTGS
- asTC in hoxa11 locus: unknown mode of interaction
- possible scenario: biderectional promoter?

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