

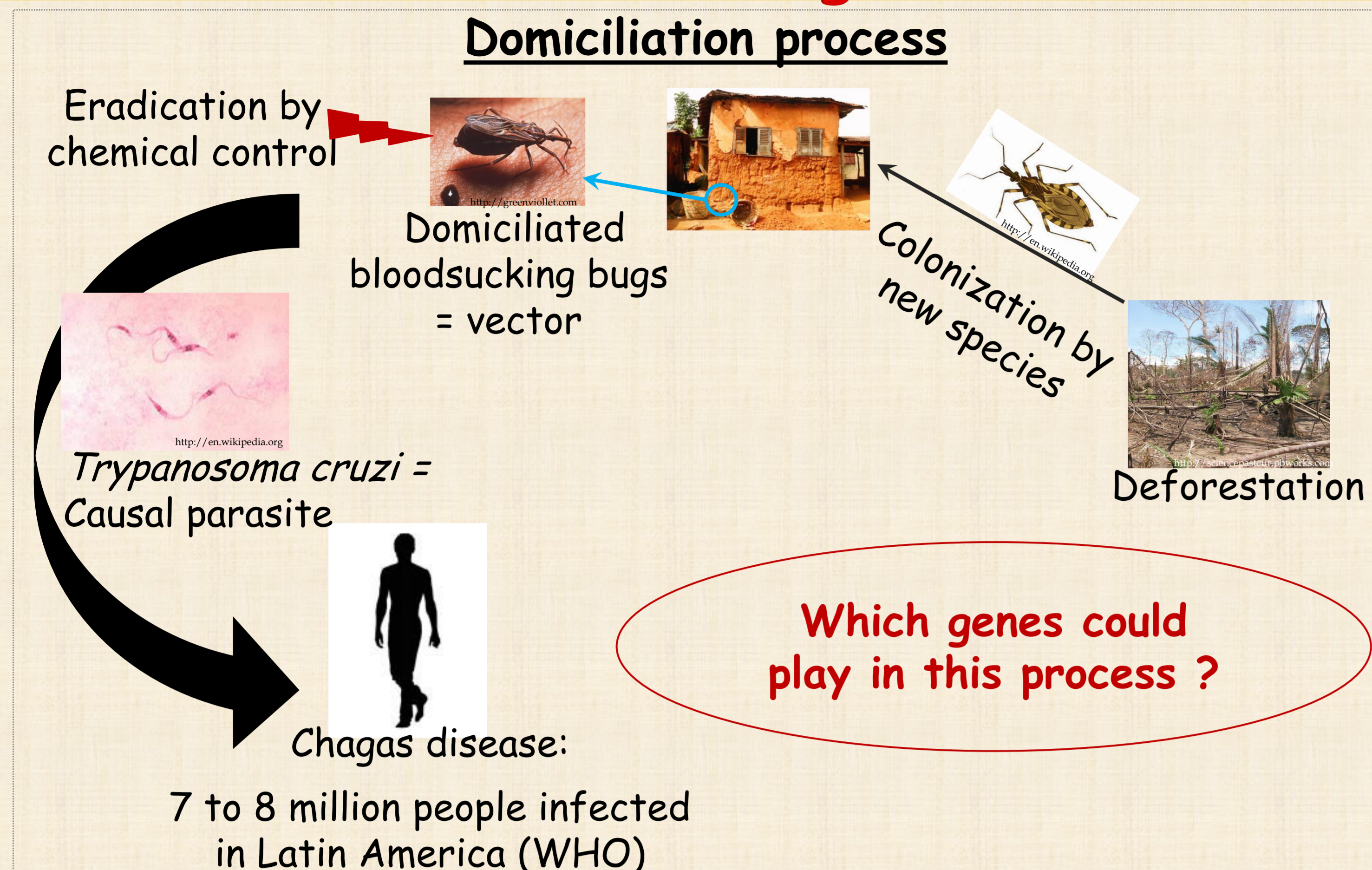


Exploring the chemosensory system using transcriptome analysis to explain the domiciliation process in Chagas disease vector

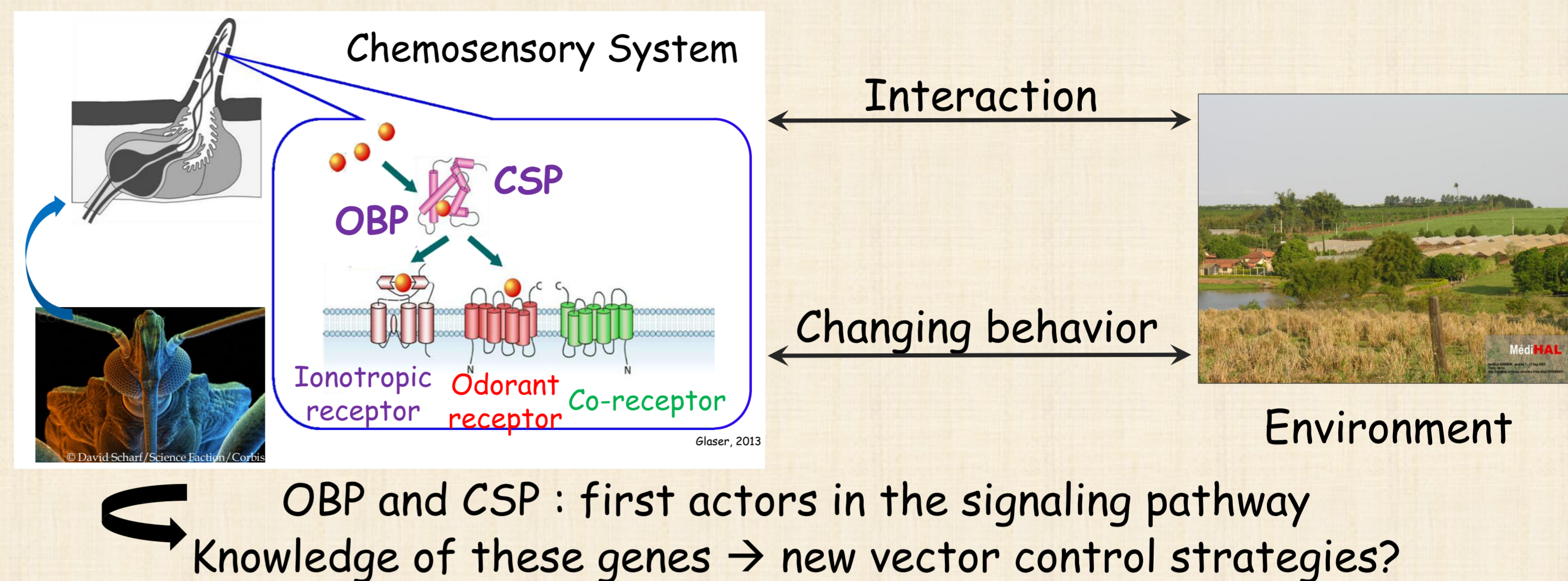
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Context : Chagas disease vectors and the domiciliation process



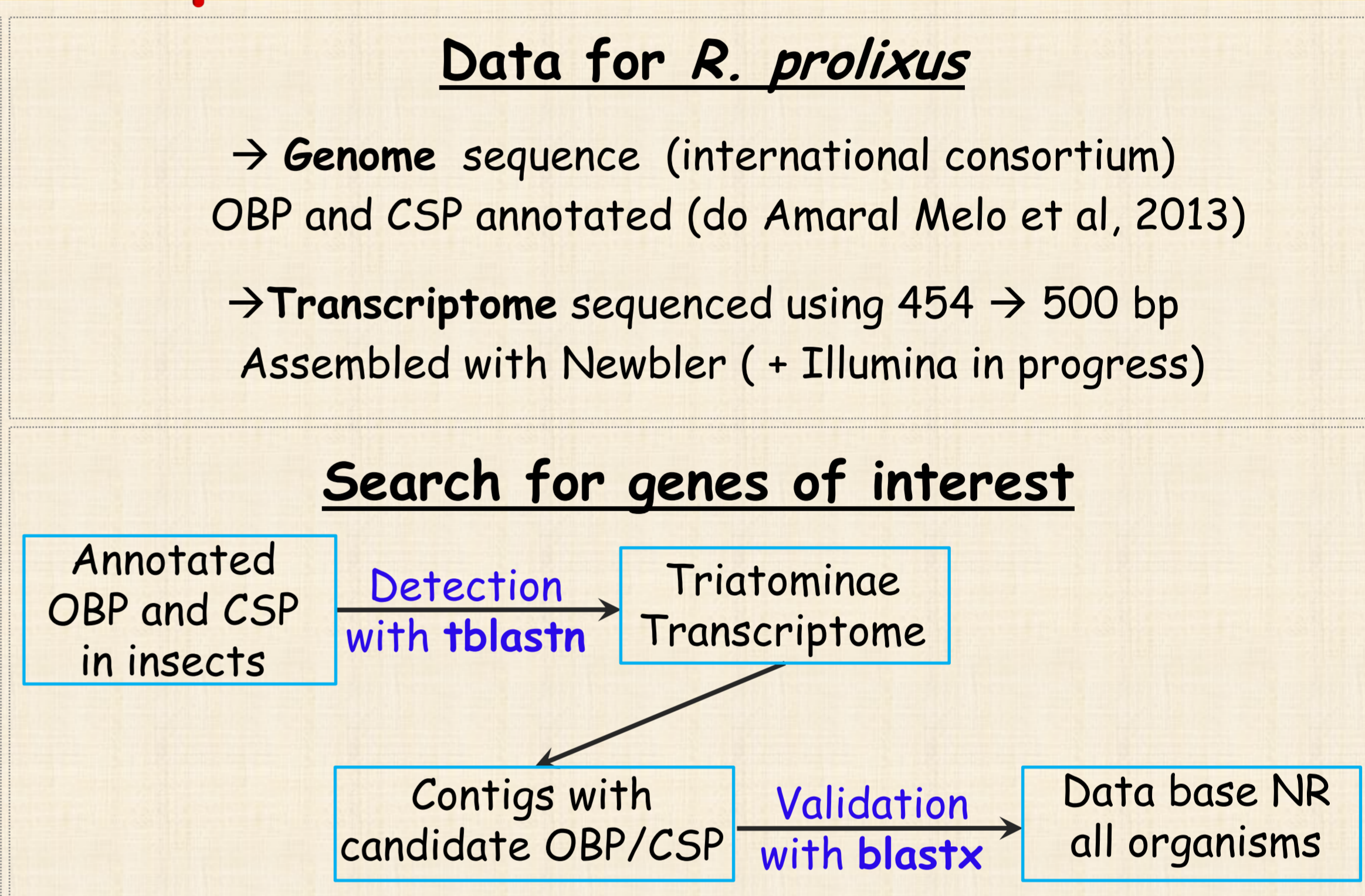
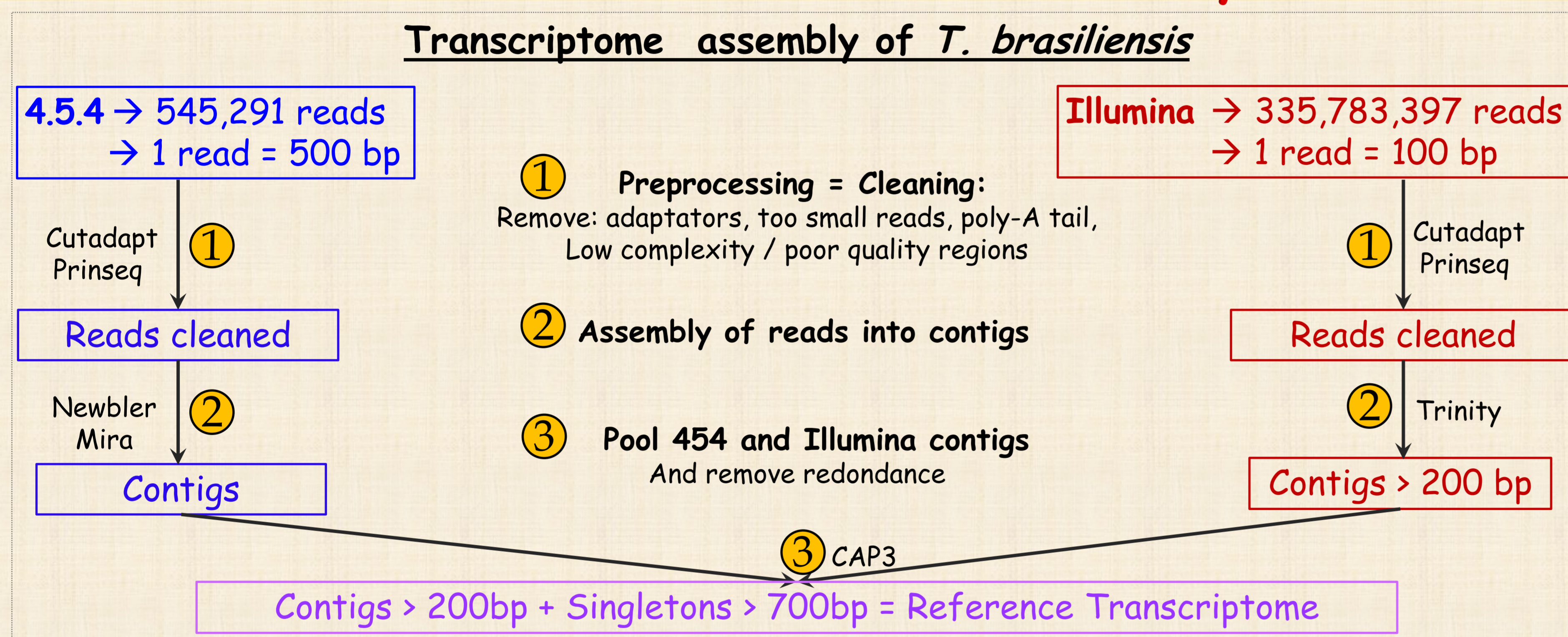
Genes coding for chemosensory proteins = candidates to domiciliation process
OBP (Odorant Binding Protein) and CSP (Chemosensory Protein)



Targets:

- Build a reference transcriptome assembly in *Triatoma brasiliensis*
- Identify OBP and CSP in *Triatoma brasiliensis* and *Rhodnius prolixus*
- Performe phylogenetic analysis of these genes in *Paraneoptera*

Methods : Analysis of transcriptome



Results : OBP and CSP variants

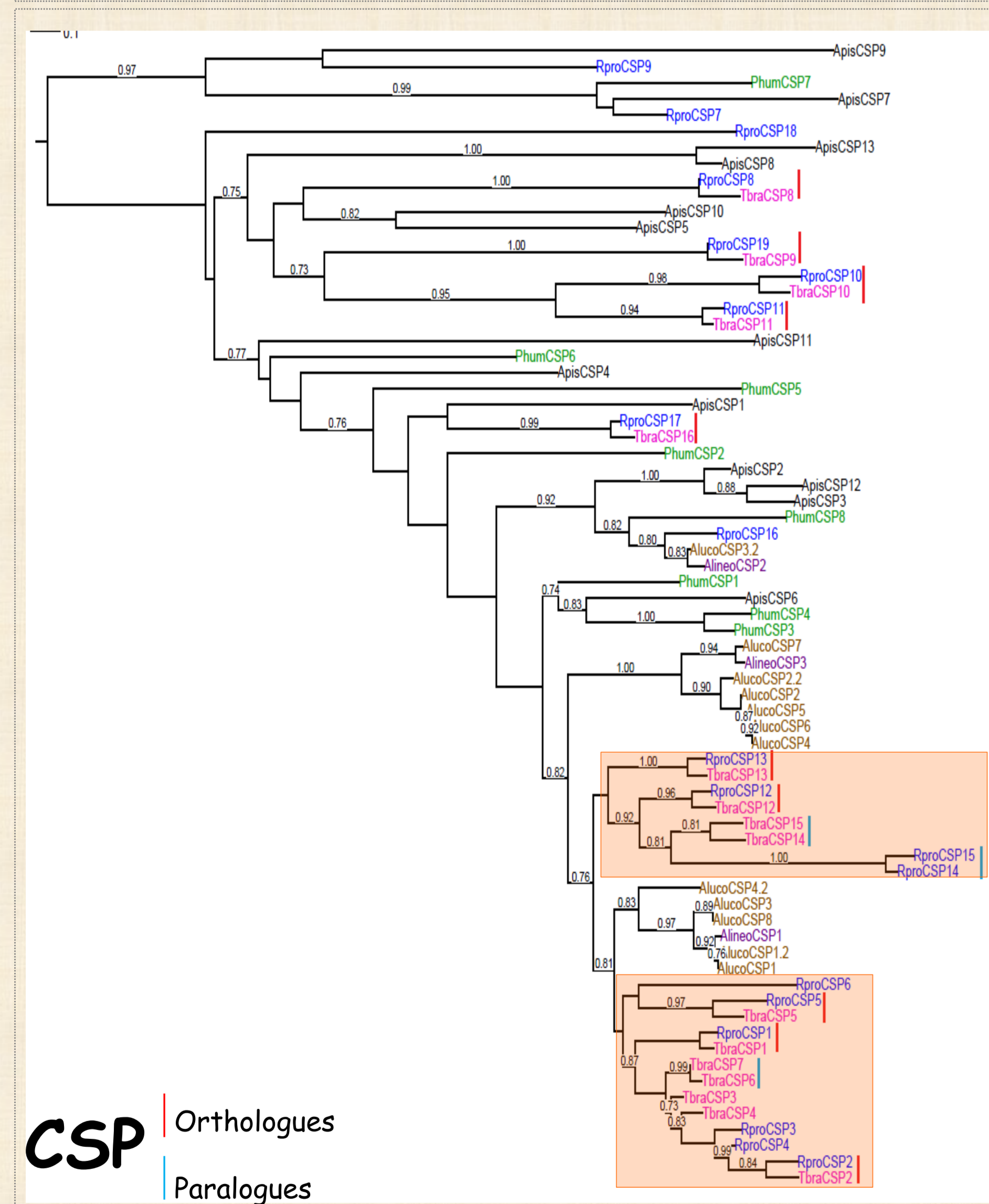
De novo assembly of *T. brasiliensis*

Expected size and number of transcripts

Number of contigs	N50	Size distribution				% CEGMA* complete	% CEGMA* partial
		min	max	median	average		
25276	1028	201	26222	750	884	61	80

Sufficient information

*: Core Eukaryotic Genes Mapping Approach



Trees of chemosensory genes in Paraneoptera

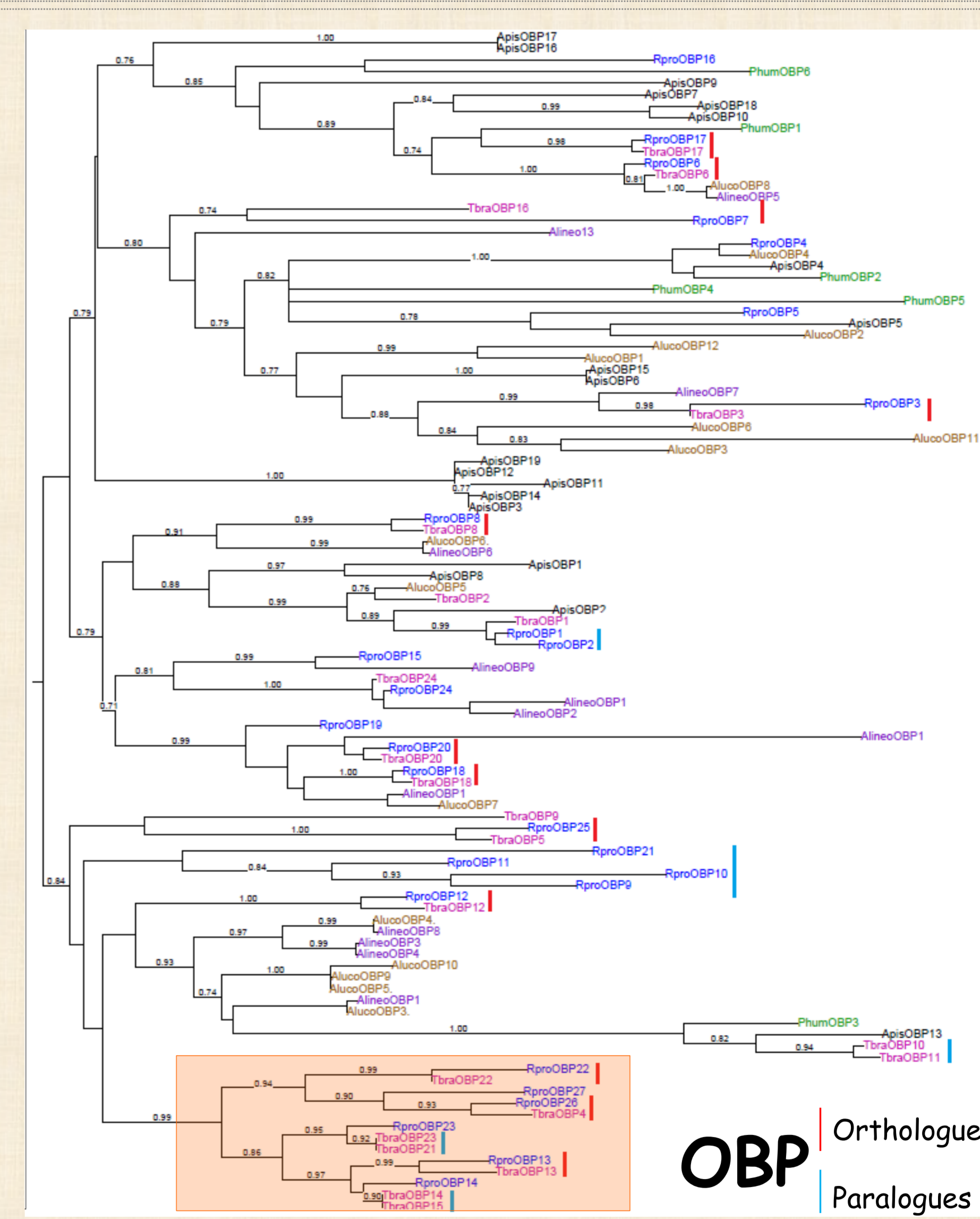
- Triatominae
- T. brasiliensis* → 16 CSP / 22 OBP
 - R. prolixus* → 19 CSP / 27 OBP
 - A. lineolatus* → 3 CSP / 13 OBP
 - A. lucorum* → 12 CSP / 15 OBP
 - A. pisum* → 13 CSP / 18 OBP
 - P. humanus* → 8 CSP / 6 OBP

Specific clades to *R. prolixus* & *T. brasiliensis*

Diversity within these clades:
4-7 CSP per bug
6-7 OBP per bug

More CSP and OBP variants in Triatominae compared to other Paraneoptera

→ Bloodsucking adaptation?
→ Adaptation to new and changing environment?



Perspectives: differential expression analysis

