

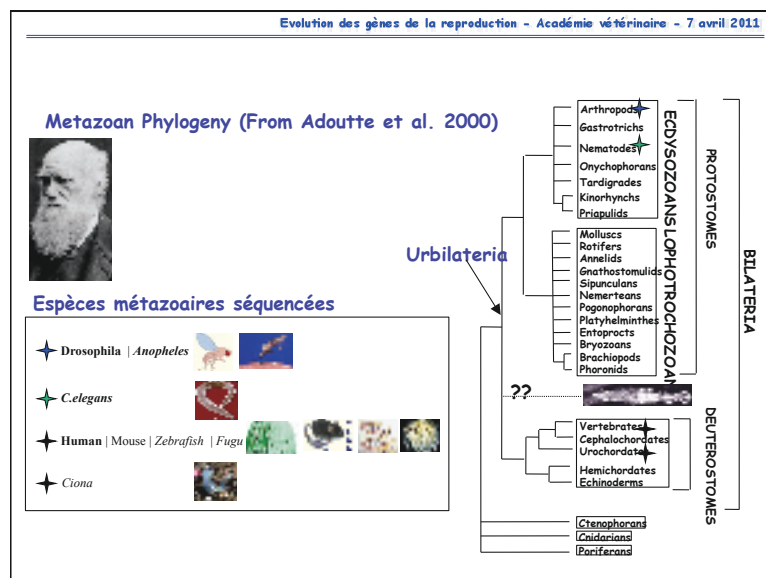
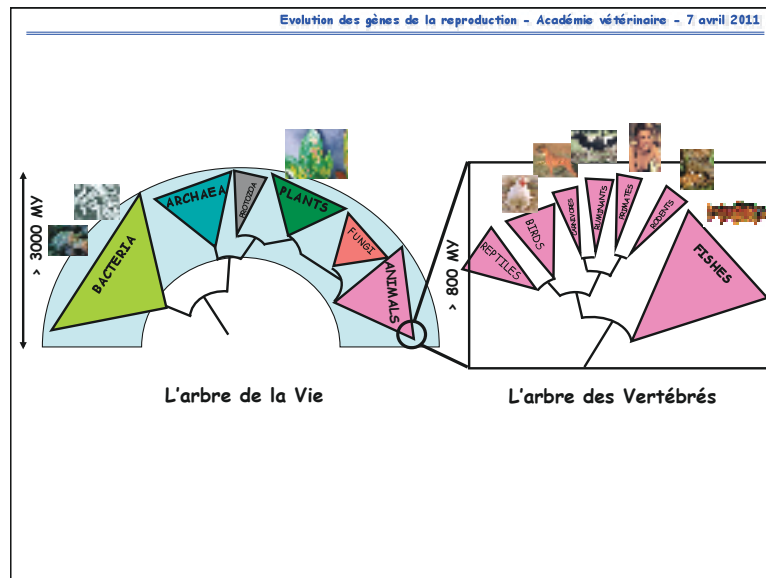
Apport des génomes séquencés à l'étude de l'histoire évolutive des gènes et des fonctions

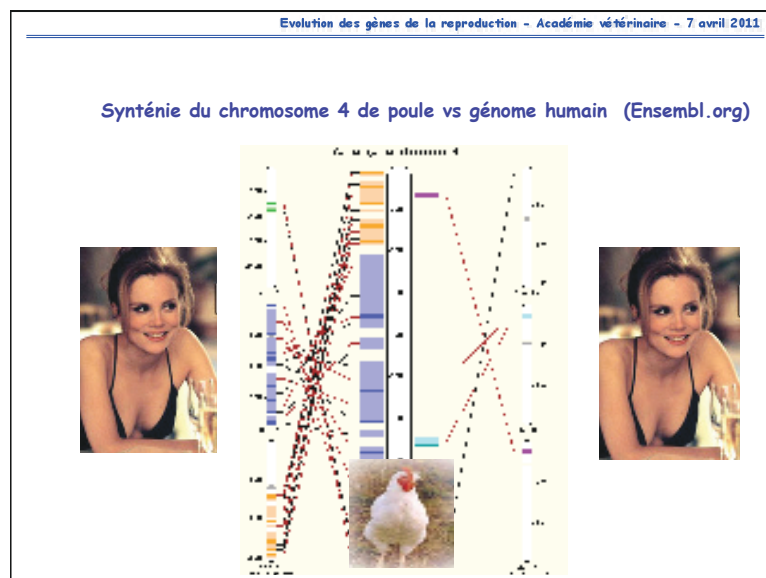
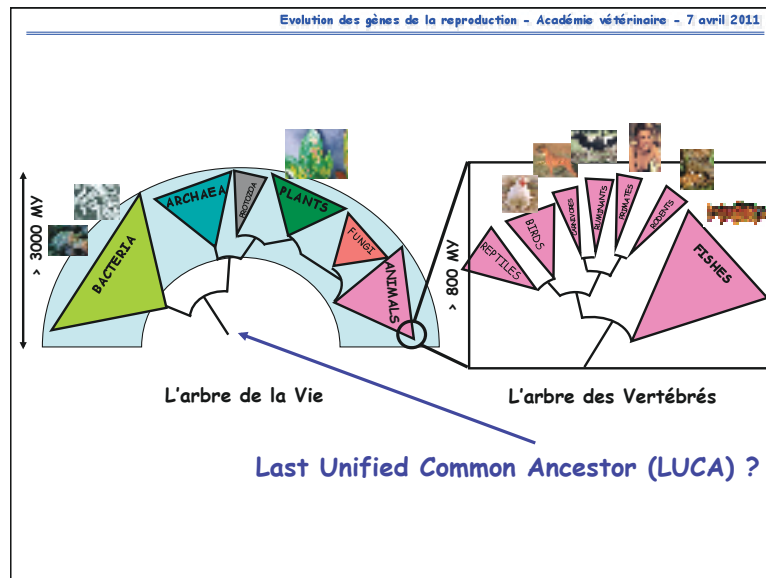
Application aux gènes de la reproduction
à évolution rapide

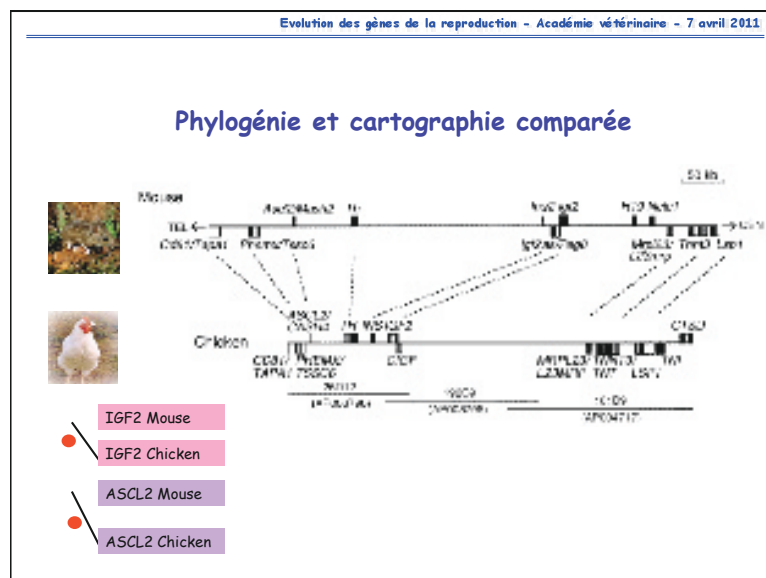
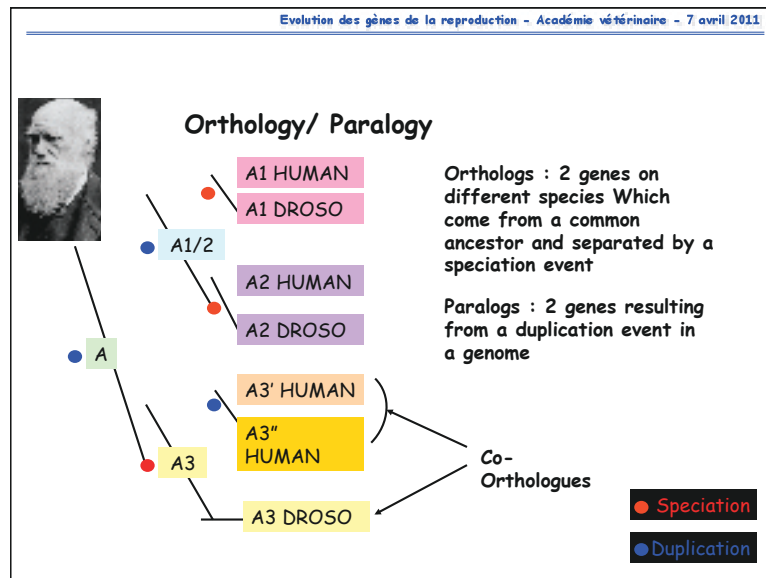
Philippe Monget, Camille Meslin, Xin Savoie, Géraldine Pascal



L'arbre des Primates









ÉVOLUTION DES GÈNES

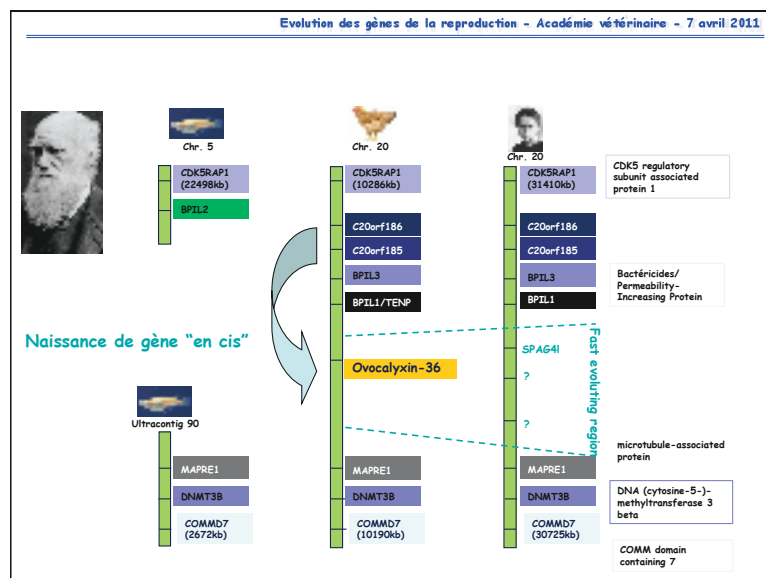
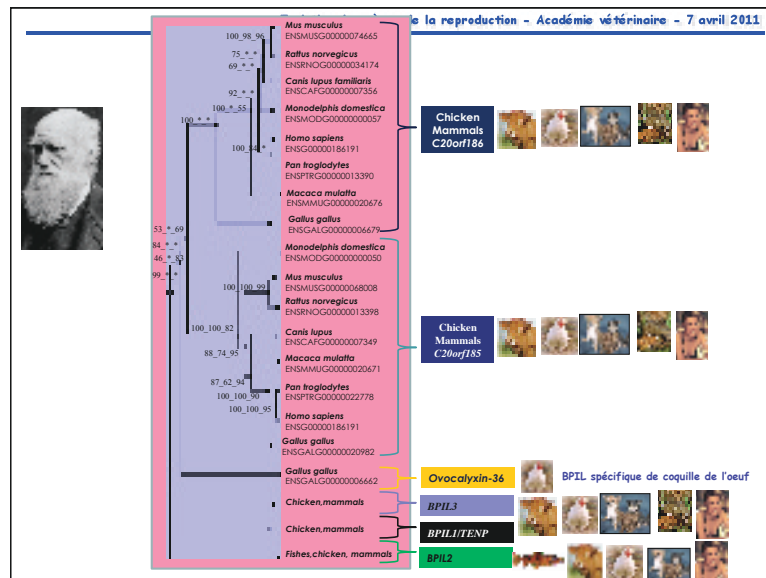
Ils naissent

Ils meurent

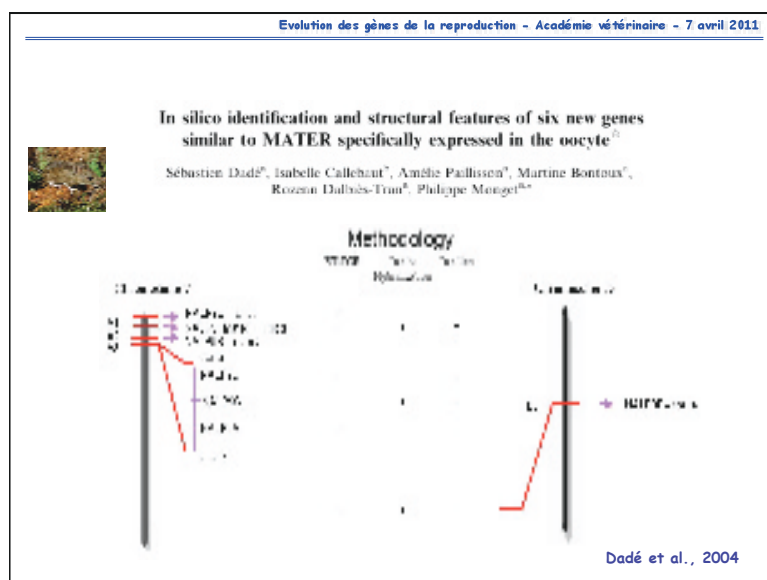
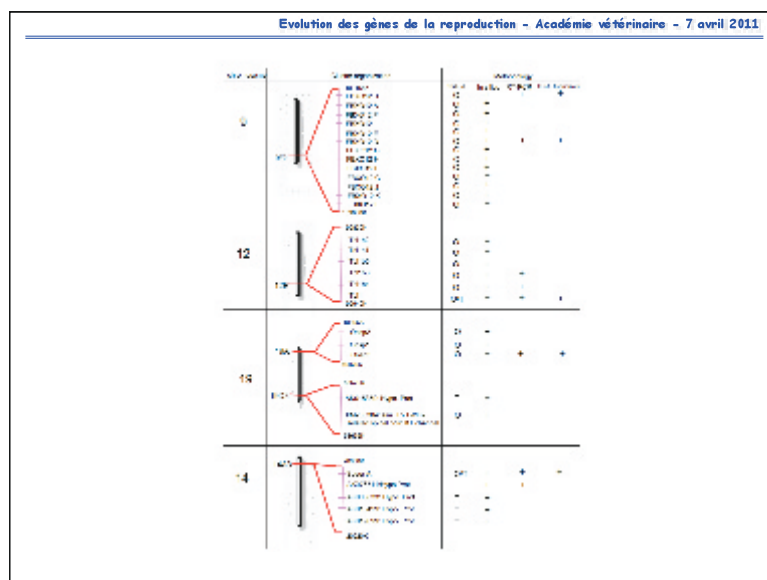
Ils évoluent sous sélection positive
sous neutralité



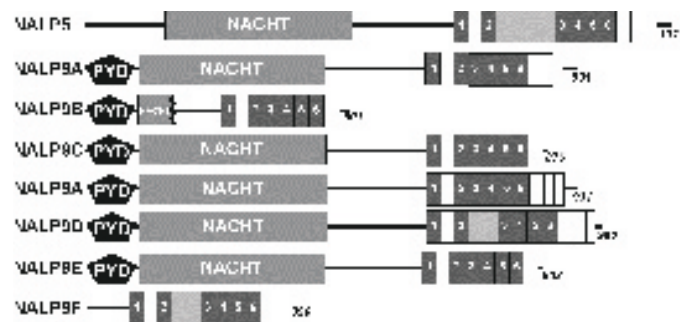
Famille des BPIL
(protéines bactéricides)



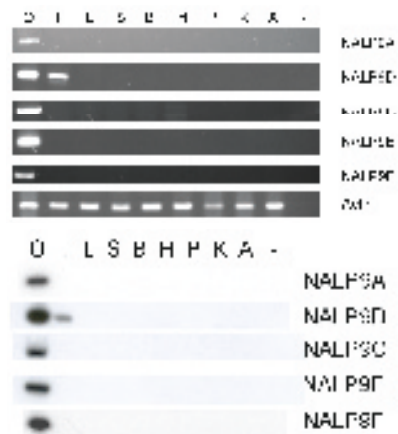
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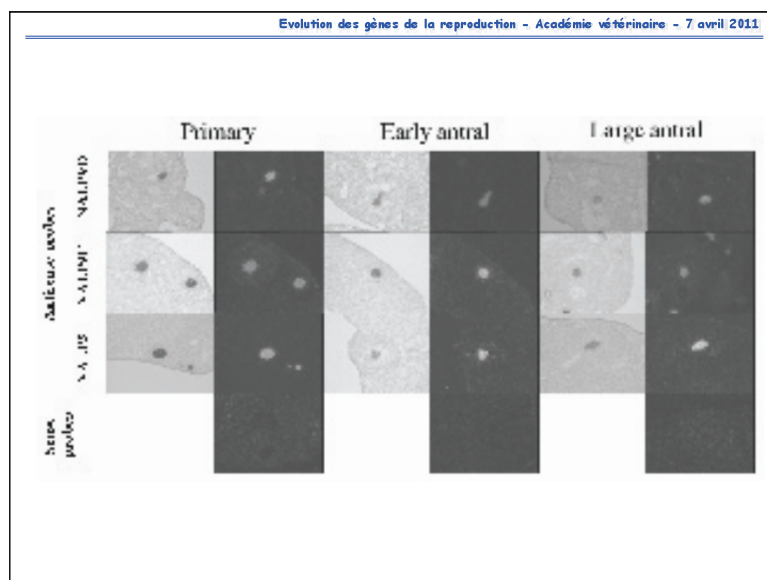


Identification of oocyte-specific Mater/NALP5 like genes



Identification of oocyte-specific Mater/NALP5 like genes





Evolution des gènes de la reproduction - Académie vétérinaire - 7 avril 2011

In silico identification and structural features of six new genes similar to MATER specifically expressed in the oocyte¹

Sebastien Dadi², Isabelle Calhazut², Amélie Pallissien², Martine Bontoux², Rozenn Dallahès-Trun², Philippe Monget^{2,3*}

Methodology

1. Identification of new genes similar to MATER in the oocyte

2. Structural features of the new genes

3. Expression of the new genes in the oocyte

4. Validation of the new genes

5. Conclusion

6. References

7. Acknowledgments

8. Funding

9. Conflicts of interest

10. Author contributions

11. Ethics statement

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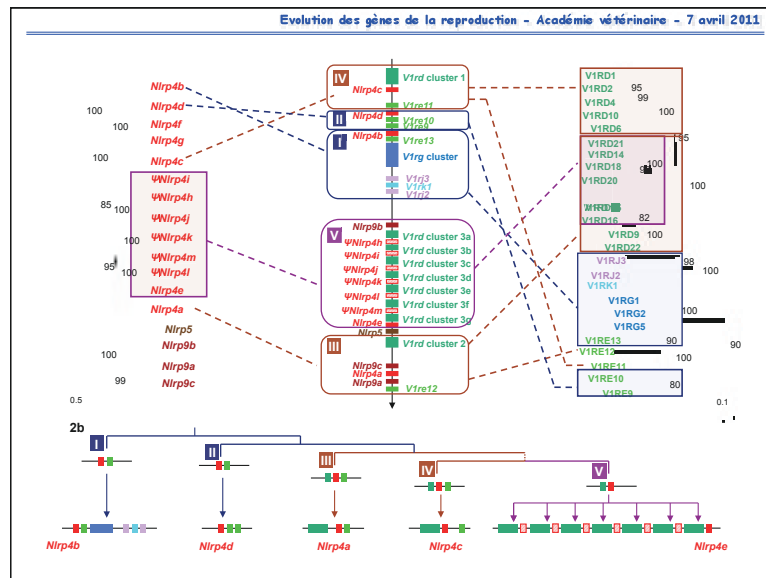
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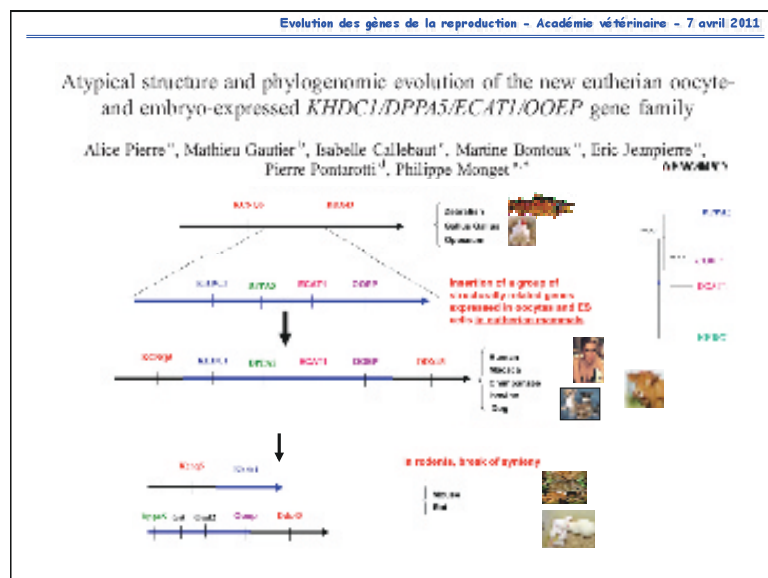
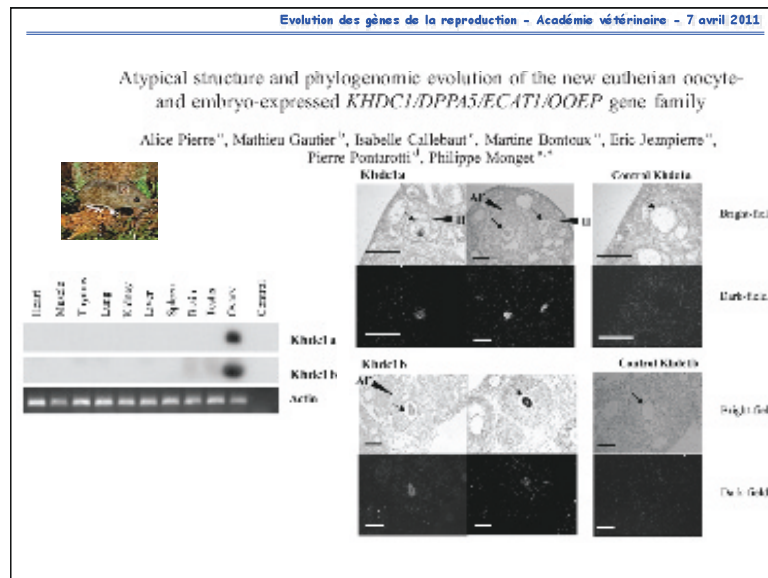
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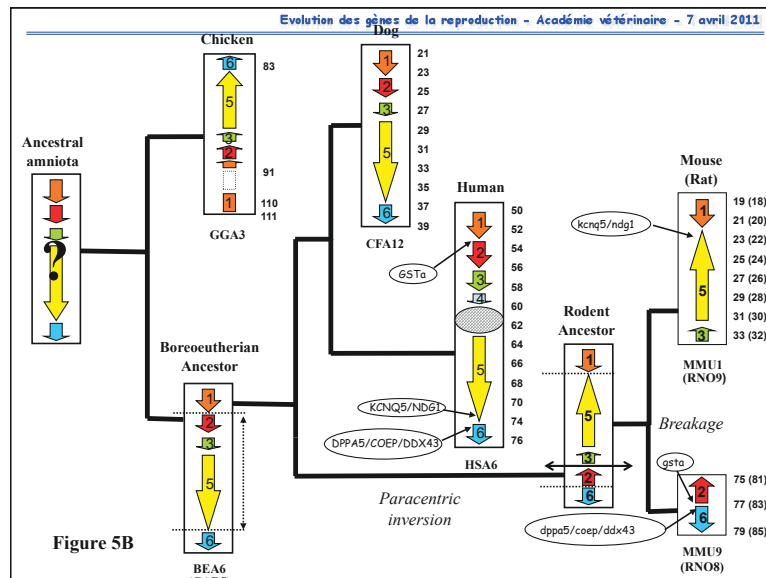


Evolution des gènes de la reproduction - Académie vétérinaire - 7 avril 2011



Naissance de gène "en trans" ?





Evolution des gènes de la reproduction - Académie vétérinaire - 7 avril 2011

ÉVOLUTION DES GÈNES

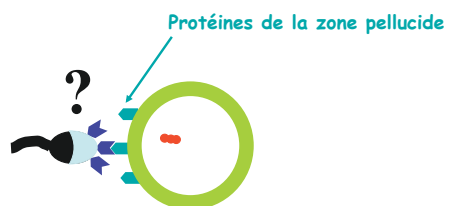
- Ils naissent
- Ils meurent
- Ils évoluent sous sélection positive
- sous neutralité

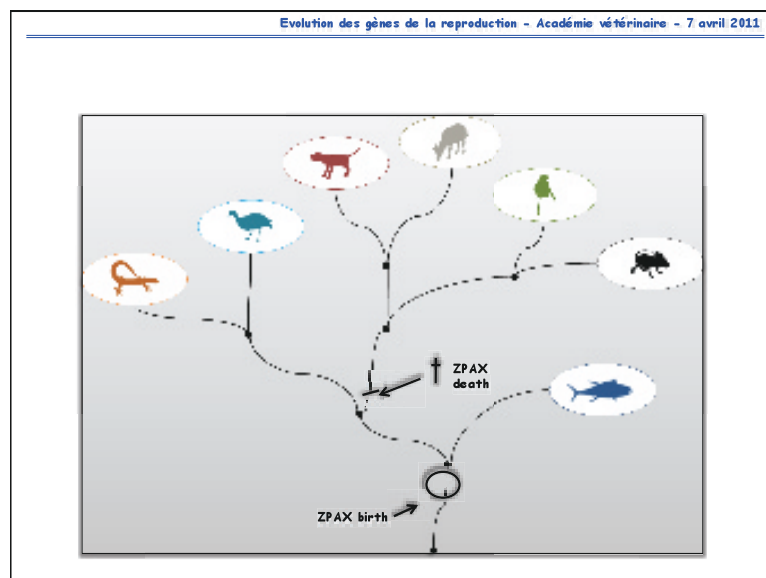
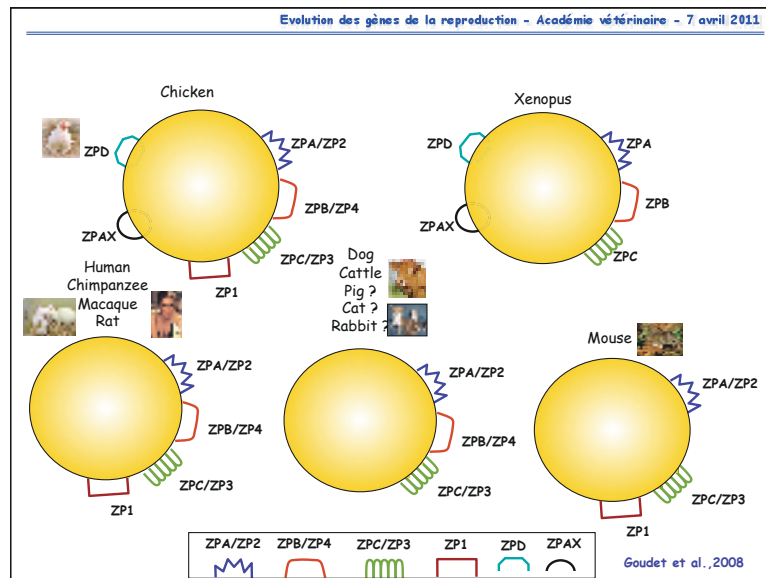
La fécondation



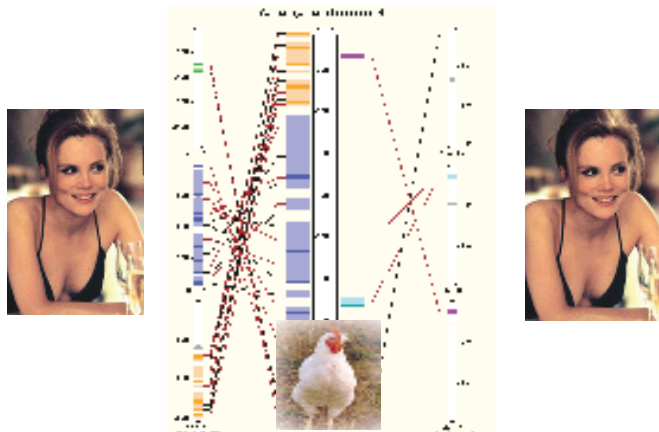
Gene death in mammals

Fixation des spermatozoïdes sur la zone pellucide de l'ovocyte

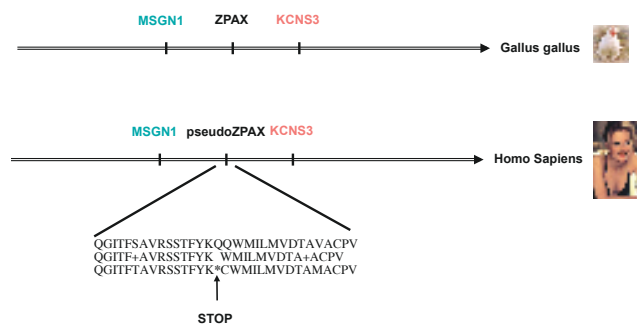


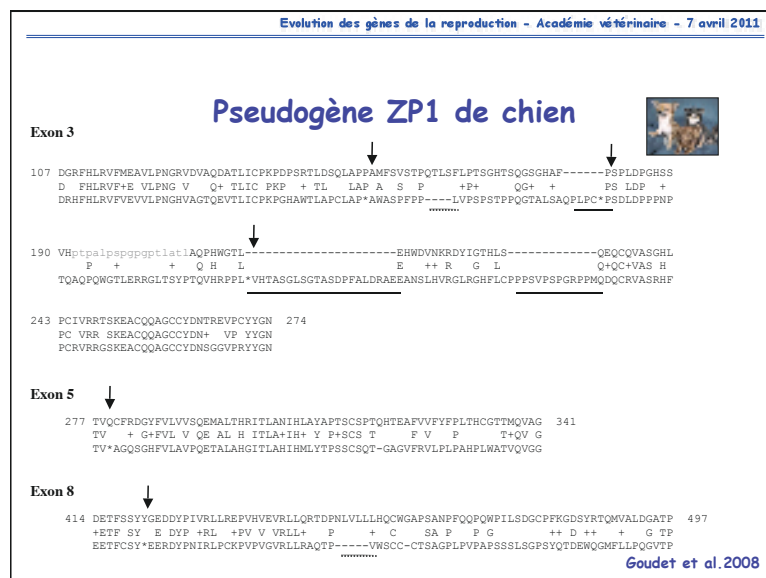
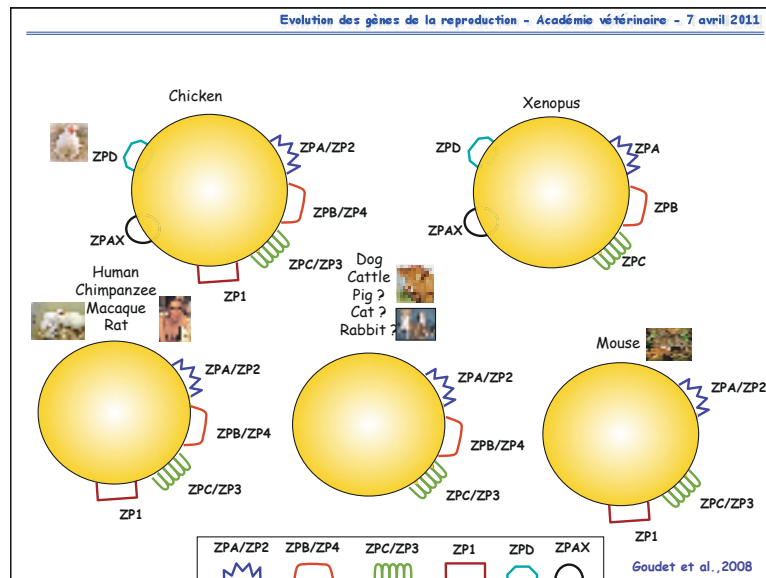


Phylogénie et cartographie comparée



Pseudogène "fossilisé" de ZPAX dans le génome de l'homme





Pseudogène ZP4 de souris

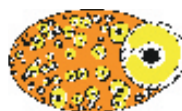
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Goudet et al.2008

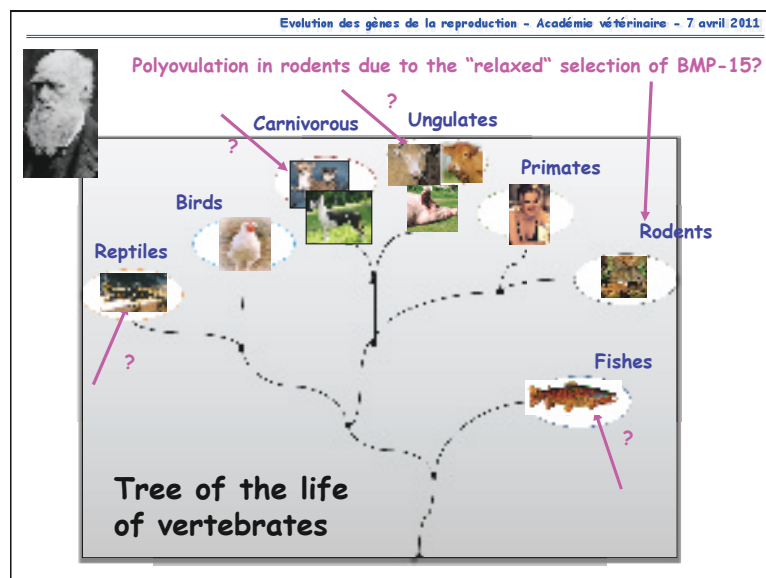
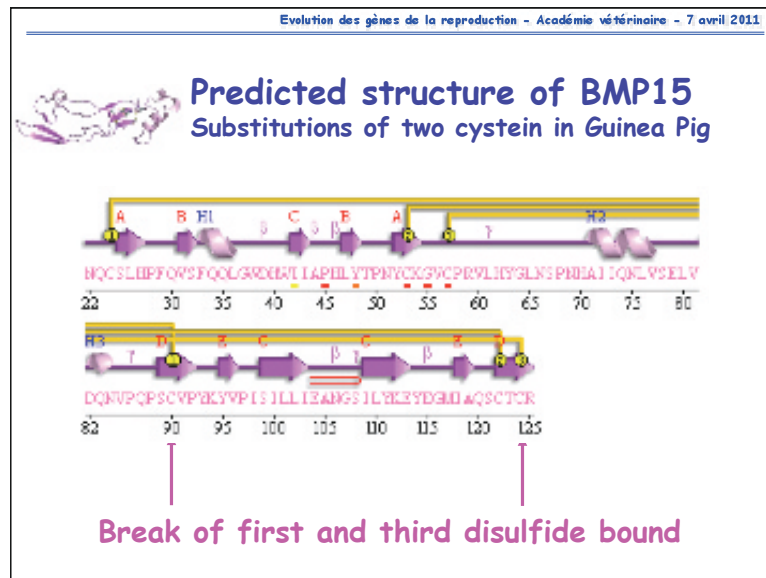
Invalidation of oocyte-expressed BMP-15 in the mouse and sheep

 $+/+$ $+/ -$

-/-



Évolution de BMP-15 explicatif de différence de taux d'ovulation entre mono- et polyovulants ?



Evolution des gènes de la reproduction - Académie vétérinaire - 7 avril 2011

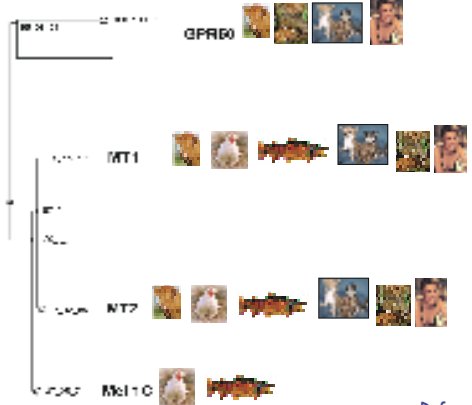


ÉVOLUTION DES GÈNES

Ils naissent
Ils meurent
Ils évoluent sous sélection positive
sous neutralité

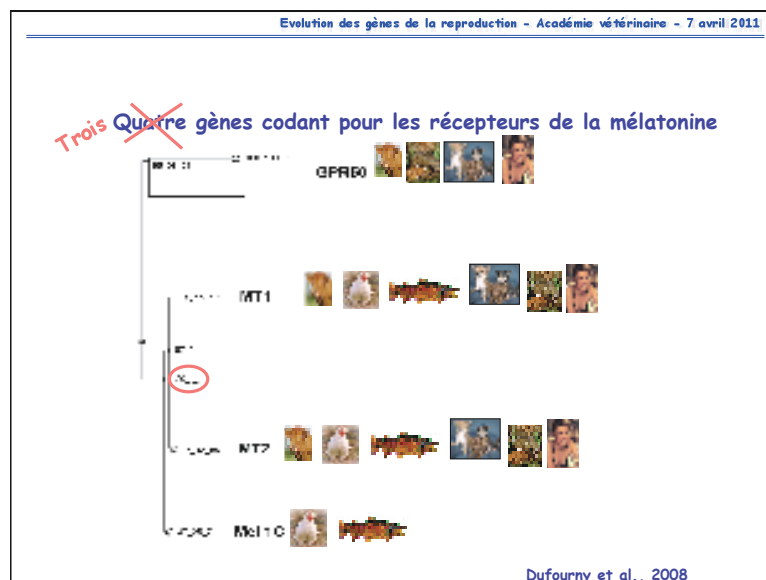
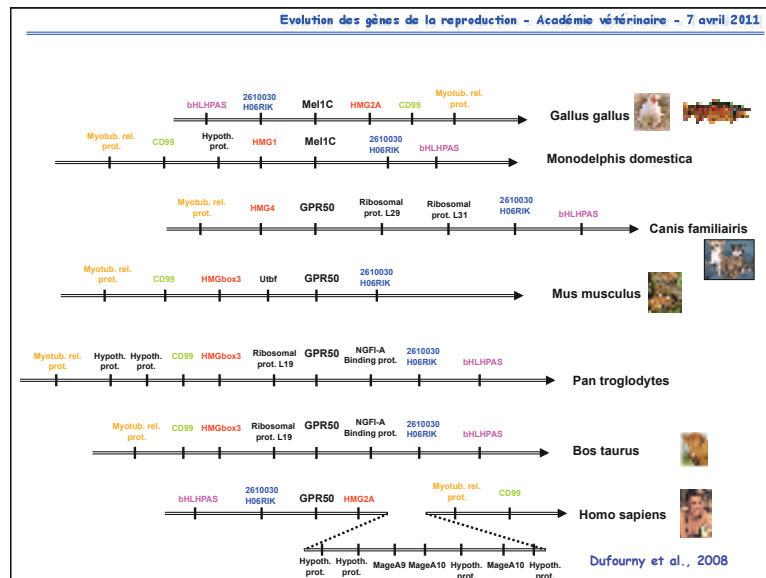
Evolution des gènes de la reproduction - Académie vétérinaire - 7 avril 2011

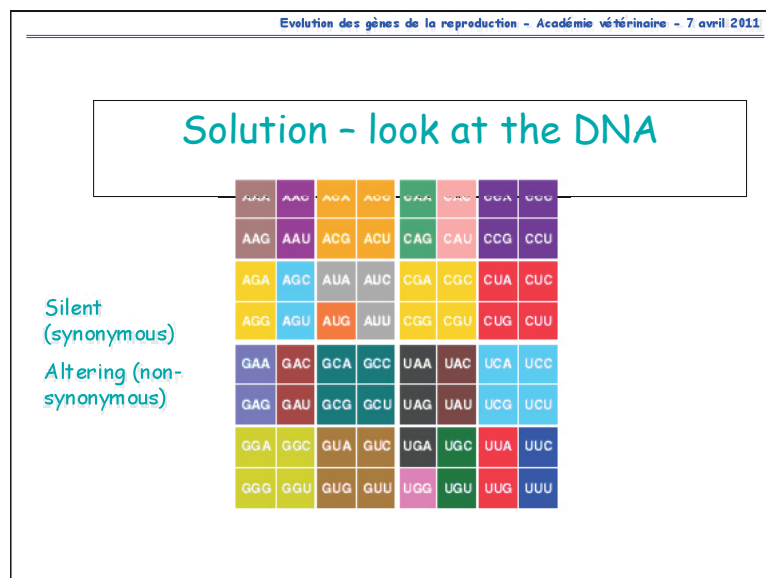
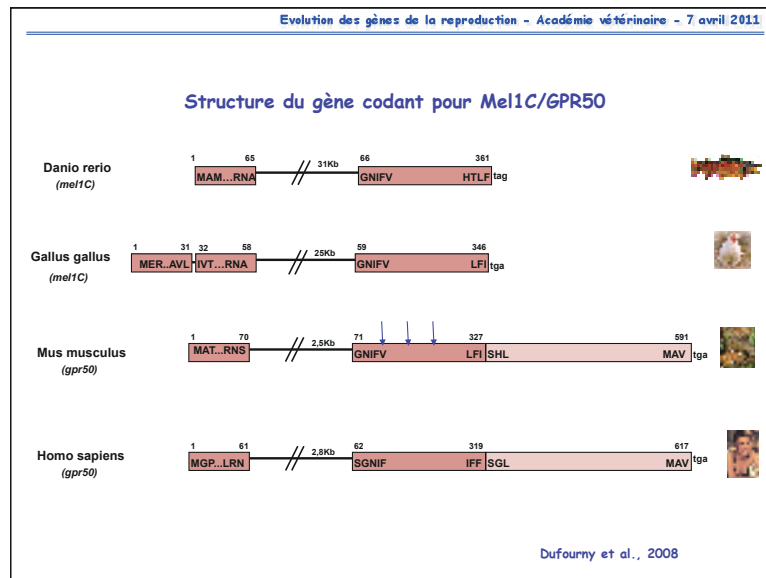
Quatre gènes codant pour les récepteurs de la mélatonine

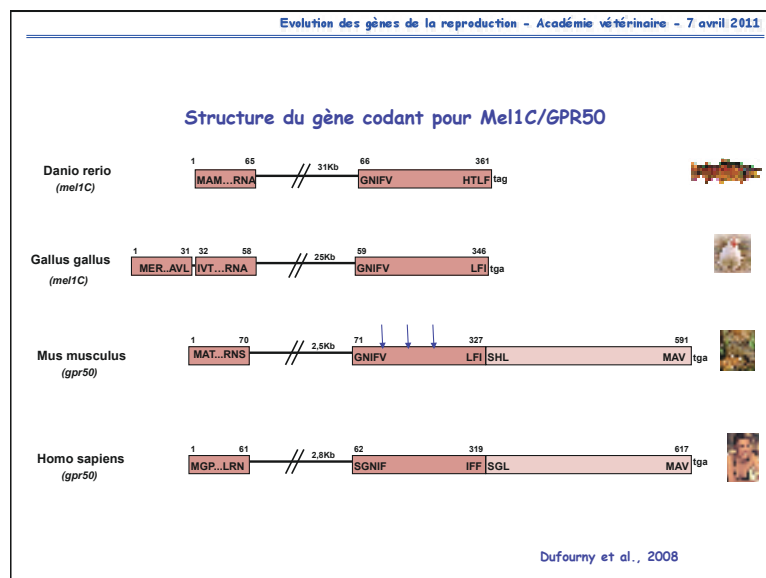
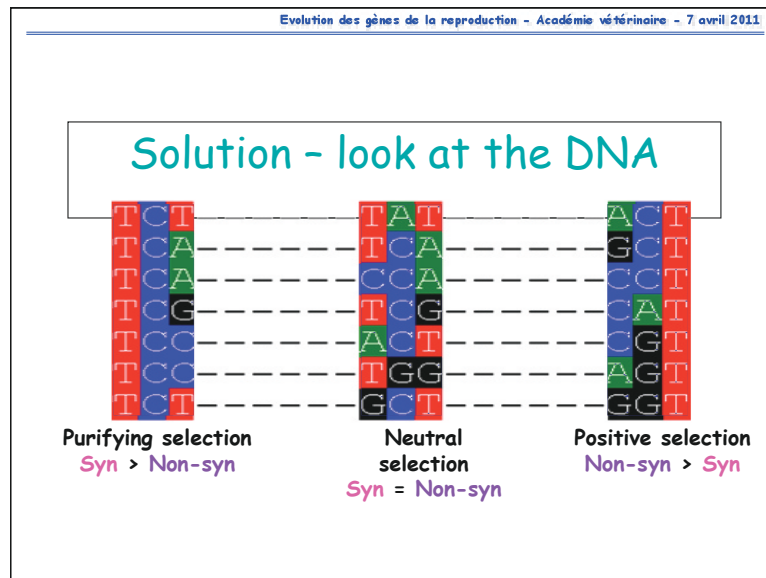


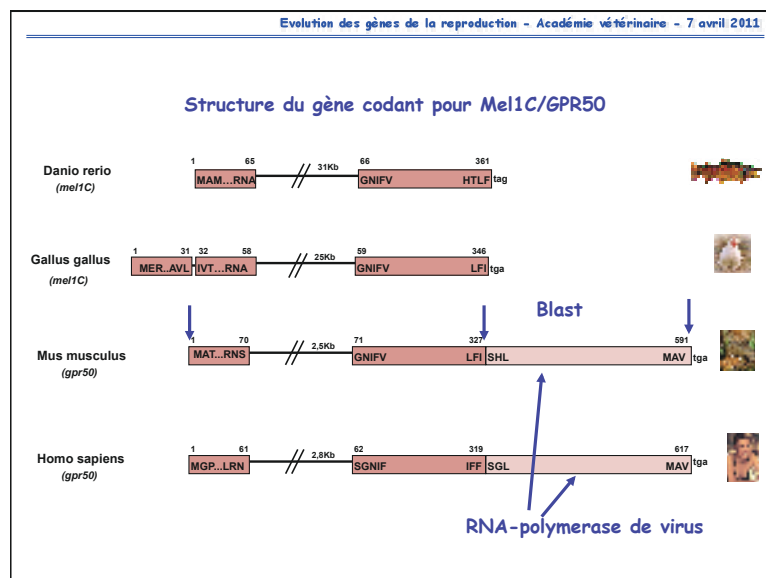
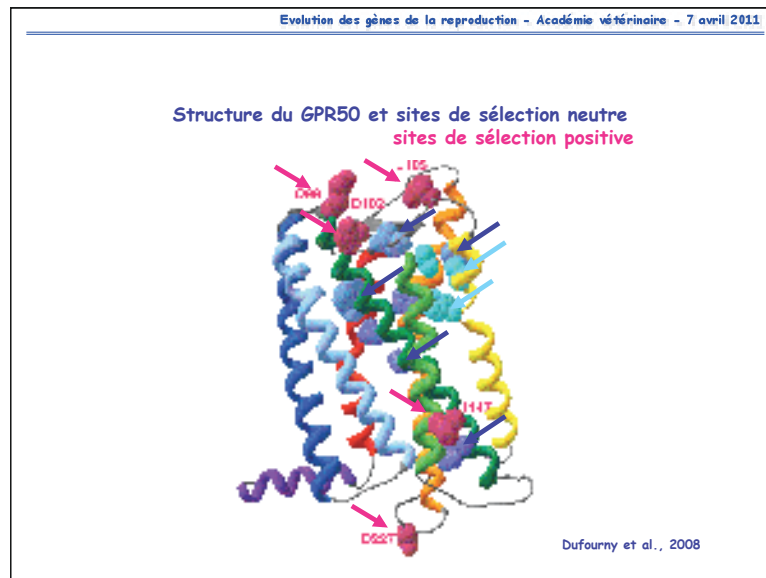
Dufourny et al., 2008

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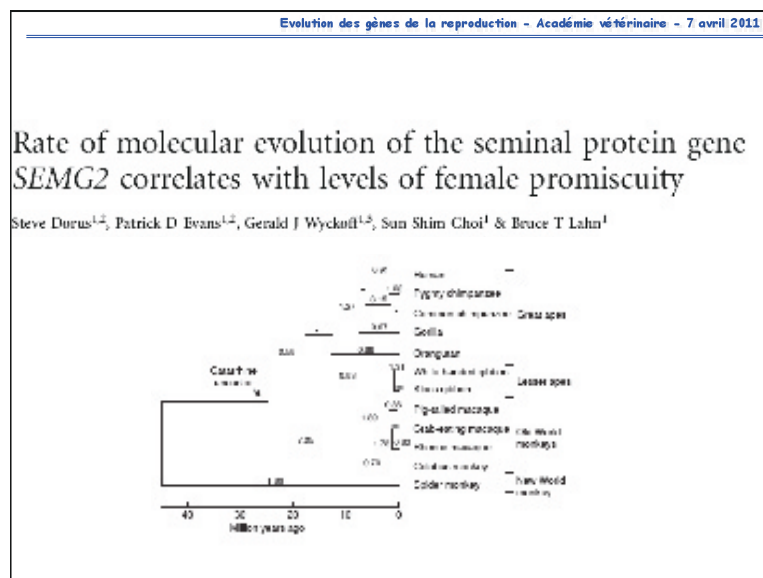
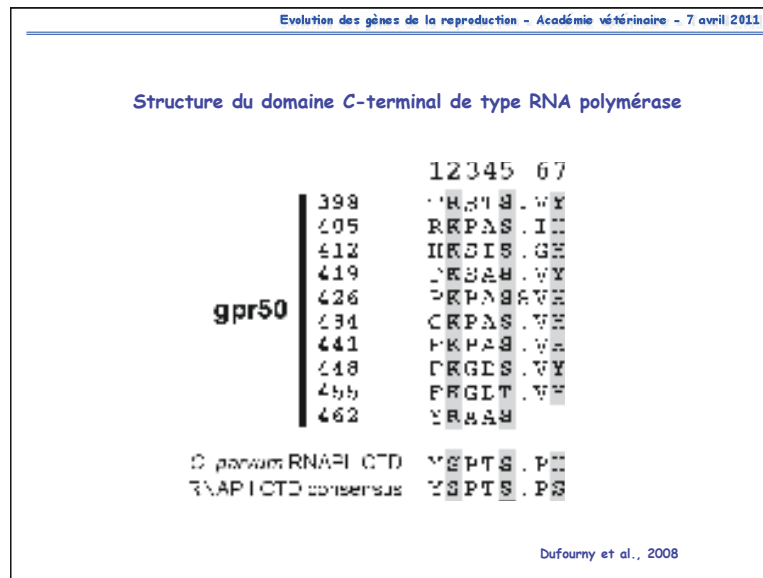


Table 1 Rates of *SEMG2* evolution and levels of polyandry in primates

Species	Mating system	Mean number of male partners per periovulatory period	ω	Vitesse d'évolution des gènes responsables du bouchon vaginal
Chimpanzees	Multimale-multifemale	~8	2.52	
Macaques	Multimale-multifemale	~3	1.28	
Human ^a	Various	1-2	0.91	
Orangutan ^b	Dispersed	1-2	0.88	
Gibbons	Monogamous	~1	0.89	
Colobus monkey	Polygynous	~1	0.70	
Gorilla	Polygynous	~1	0.61	

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Mise en regard de la position des gènes dans les arbres phylogénétiques et leur localisation dans les cartes

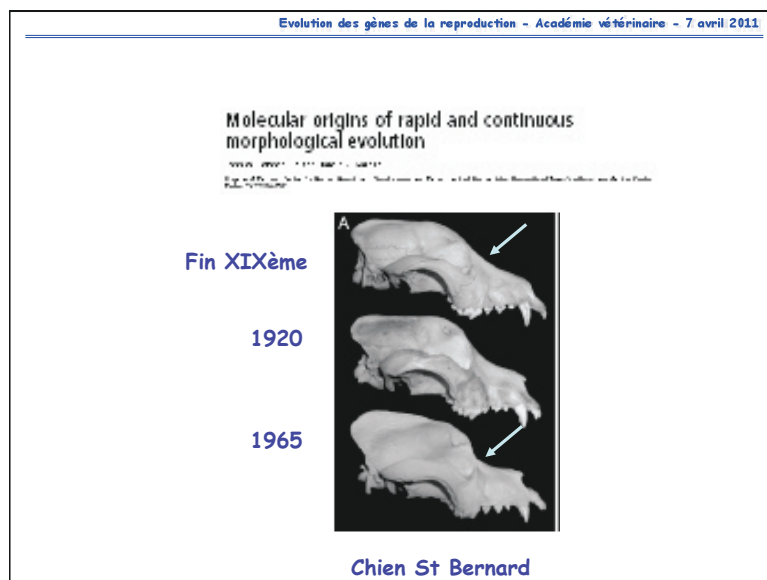
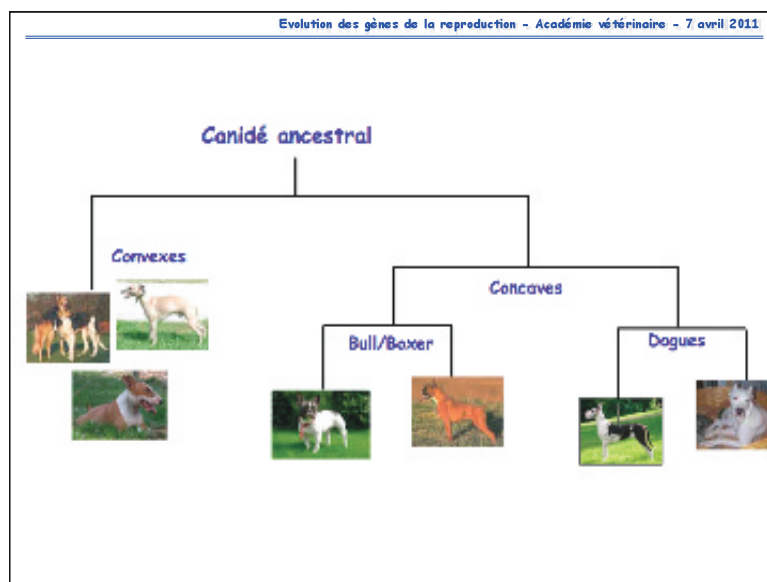
Comment sont apparus les mammifères ?

Pourquoi les oiseaux ne deviennent jamais diabétiques ?

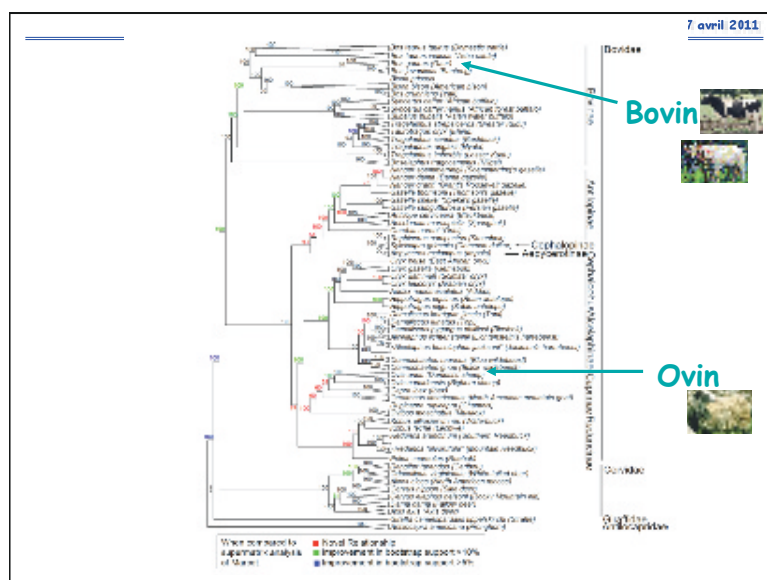
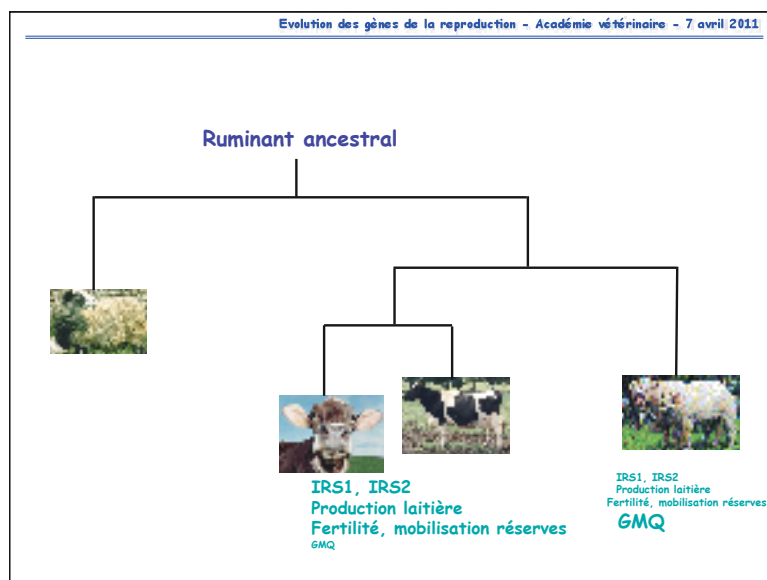
Pourquoi les oiseaux volent ?

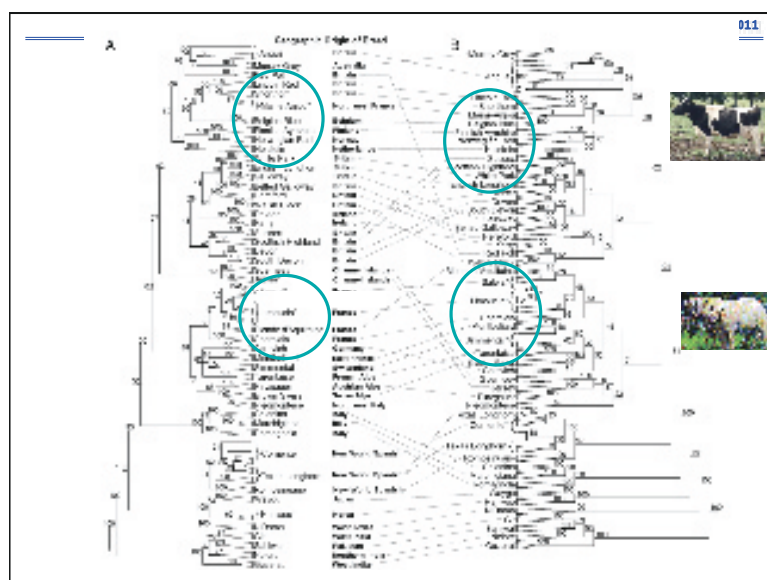
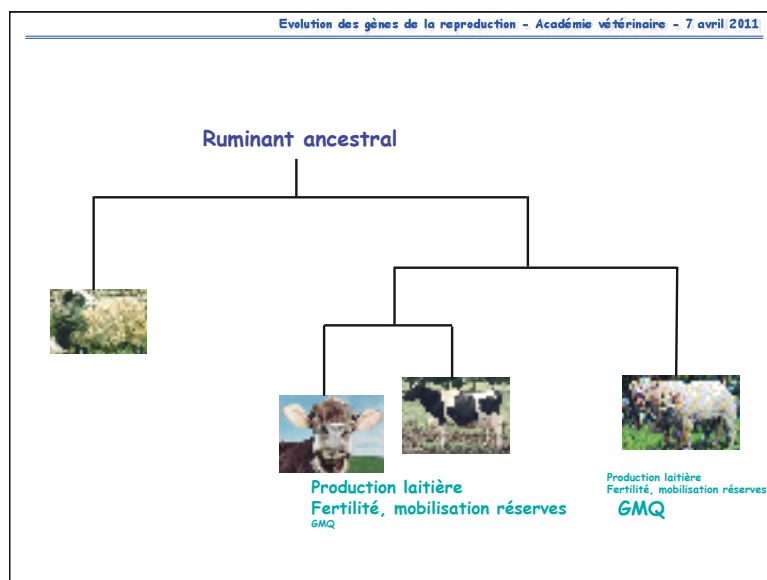
Figure 1: Evolution of genes in the cluster. The figure displays a dendrogram on the left, a central table of gene names and accession numbers, and a phylogenetic tree on the right. The dendrogram shows hierarchical clustering of genes. The central table lists genes like 'P1', 'P2', 'P3', etc., with their corresponding accession numbers. The phylogenetic tree shows the evolutionary relationships between these genes, with branches labeled with numbers.

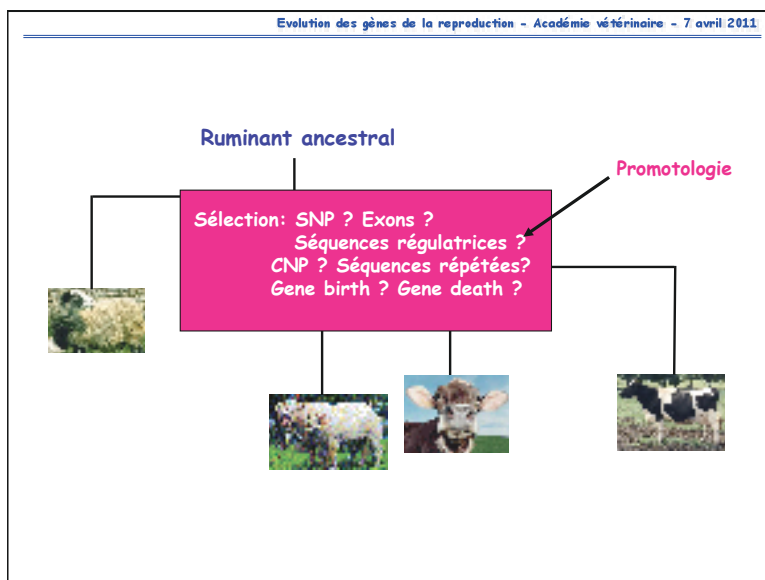
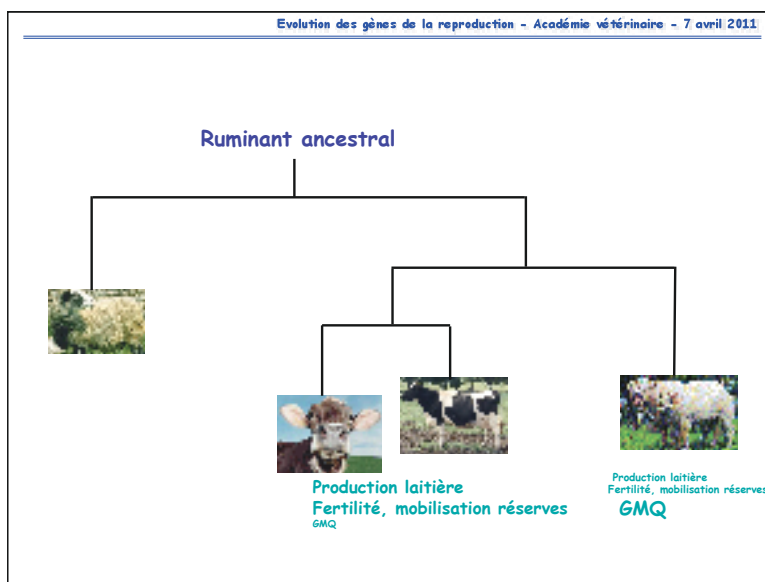
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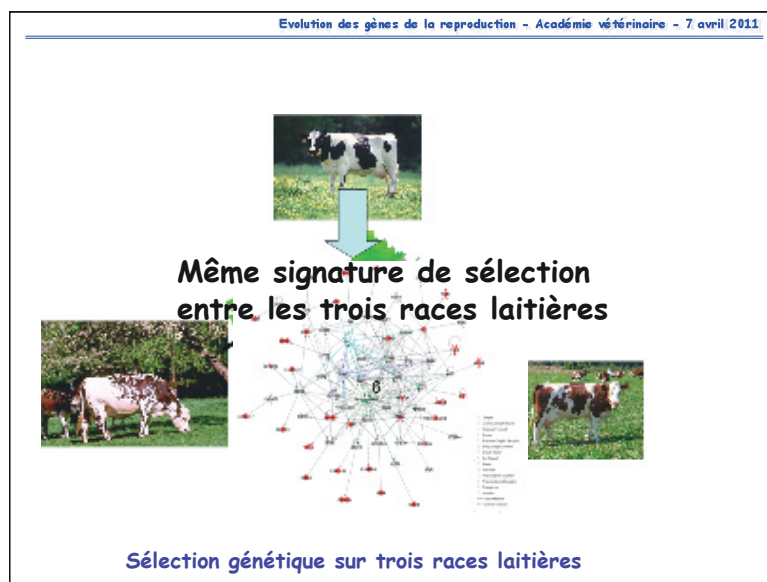


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