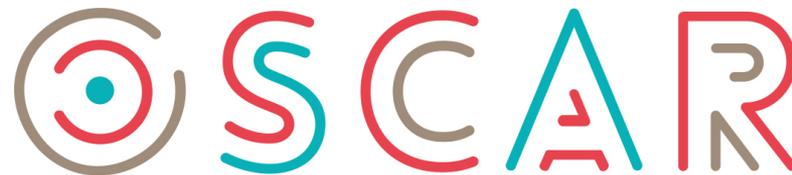


# Tout savoir sur la génétique

Barbara Girerd

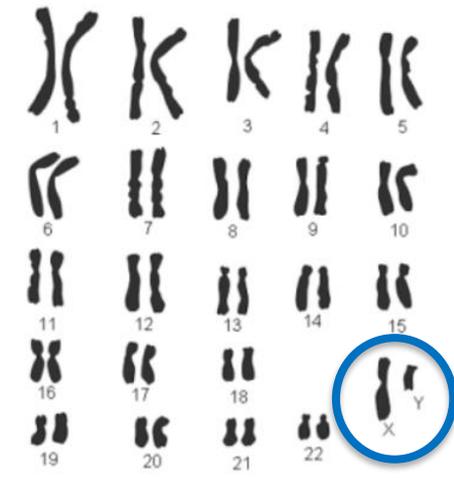
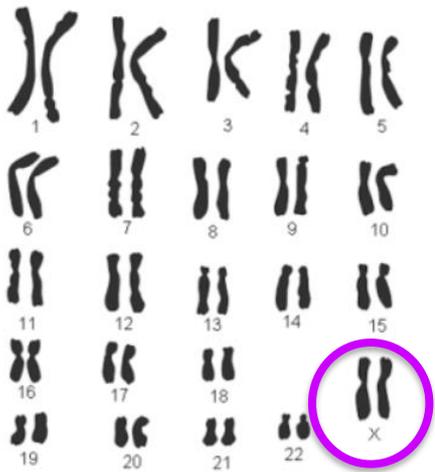
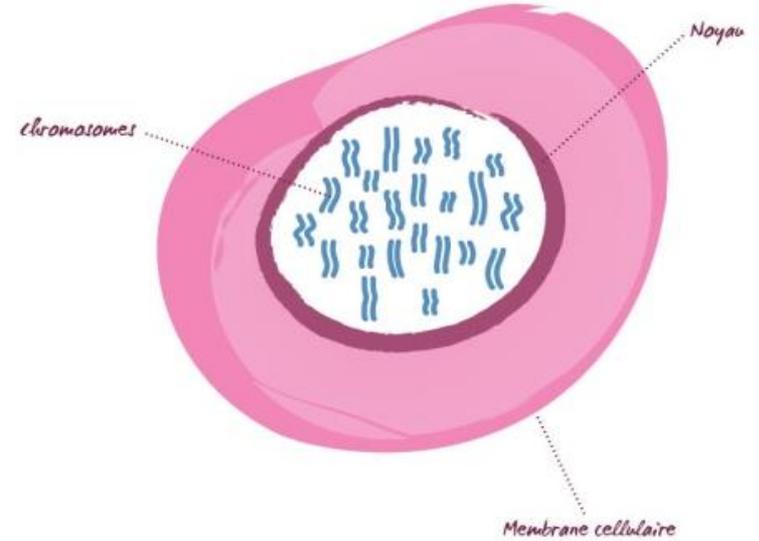
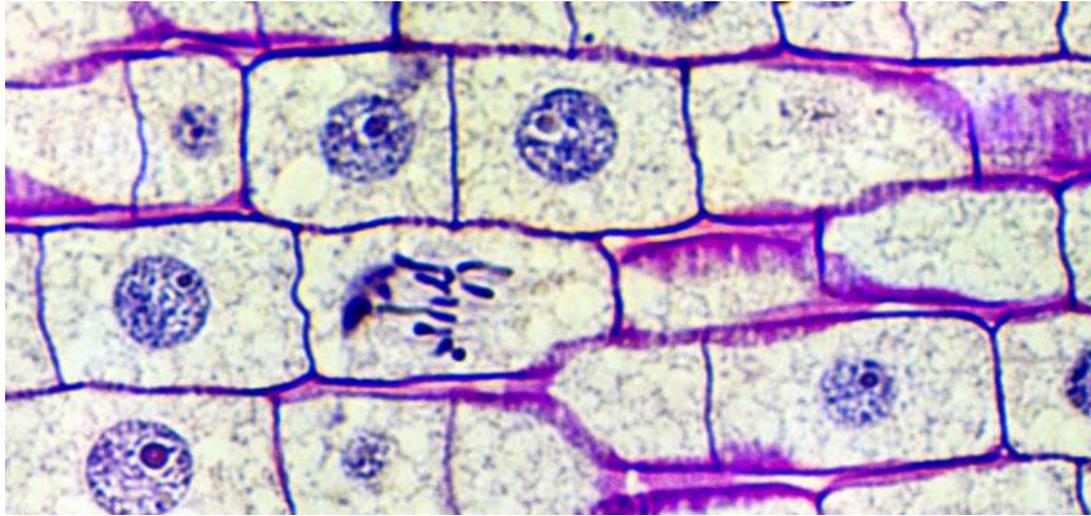


[filiere-oscar.fr](http://filiere-oscar.fr)

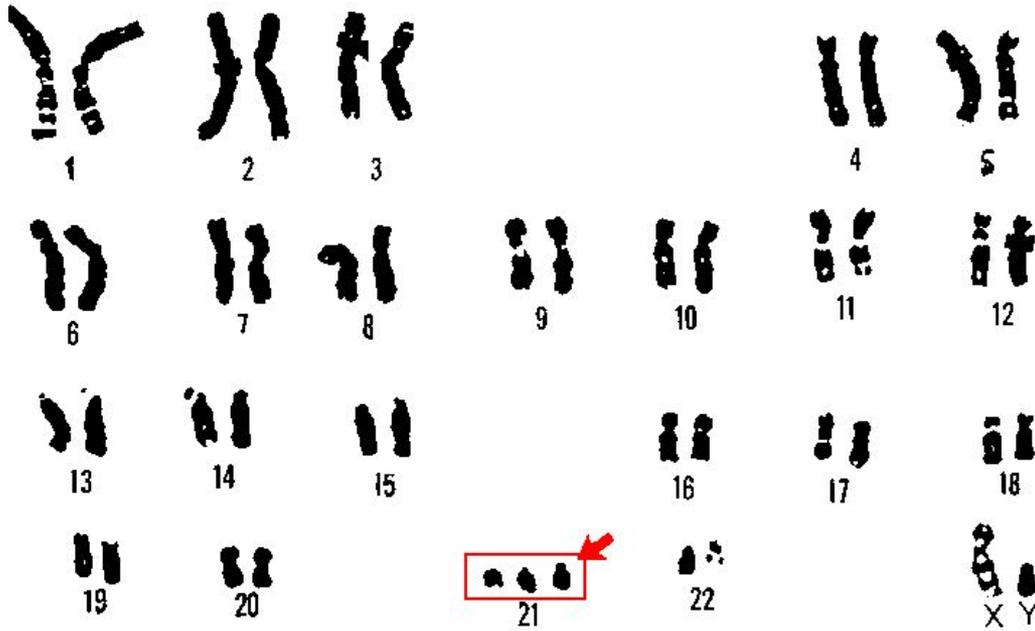
FILIÈRE  
SANTÉ  
MALADIES  
RARES

# La génétique en images

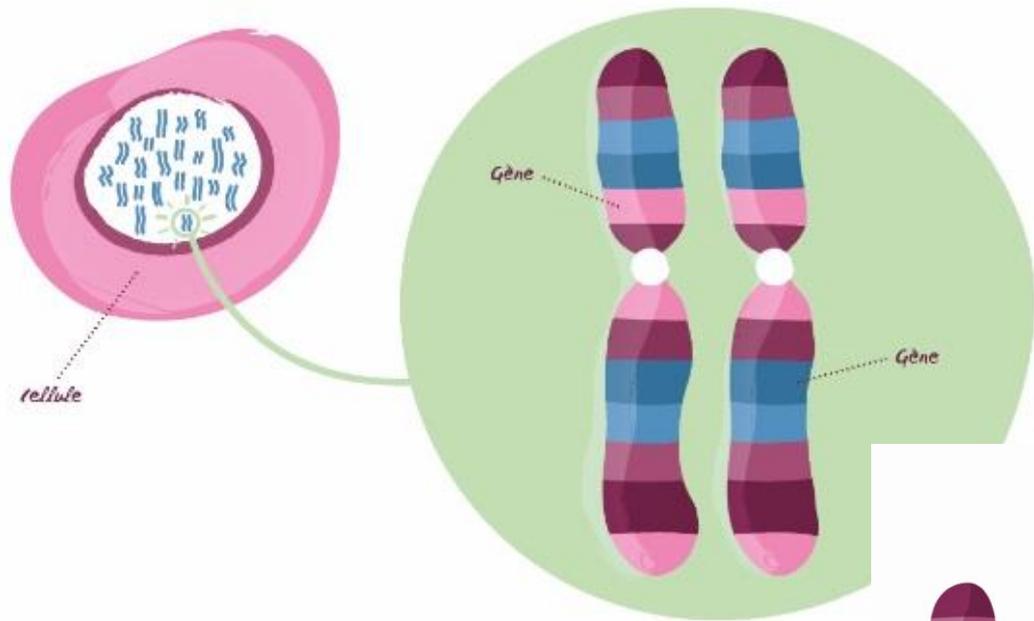
# La cellule et ses chromosomes



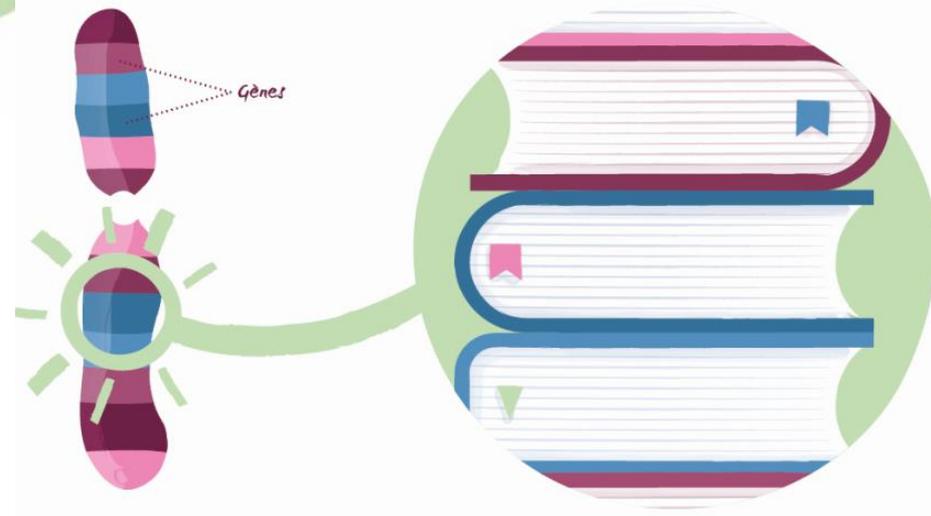
# Les anomalies chromosomiques



## Les chromosomes



## Les gènes



Les gènes

Gènes

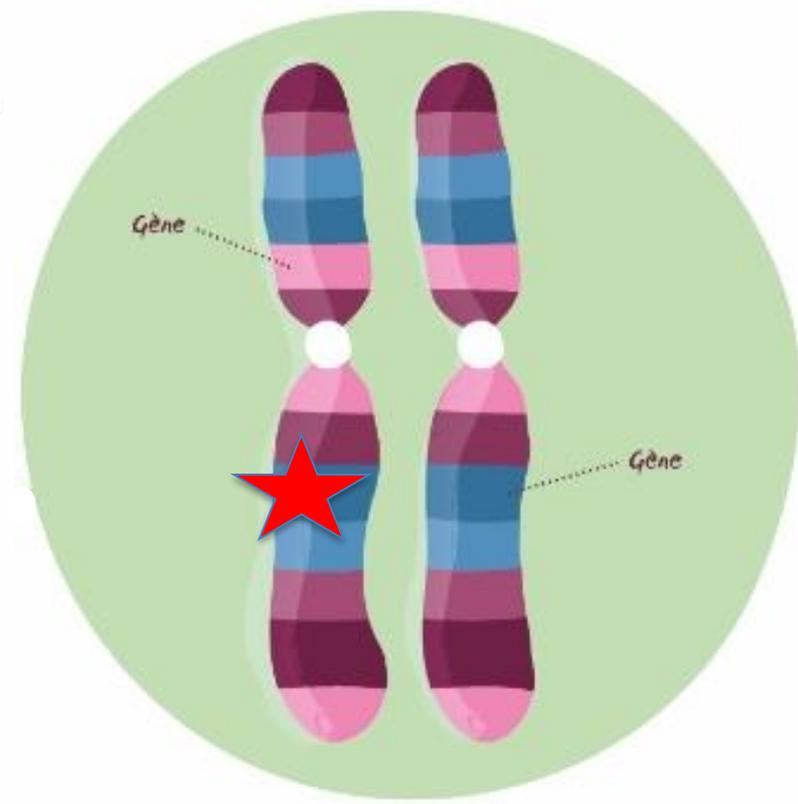
20 000 gènes



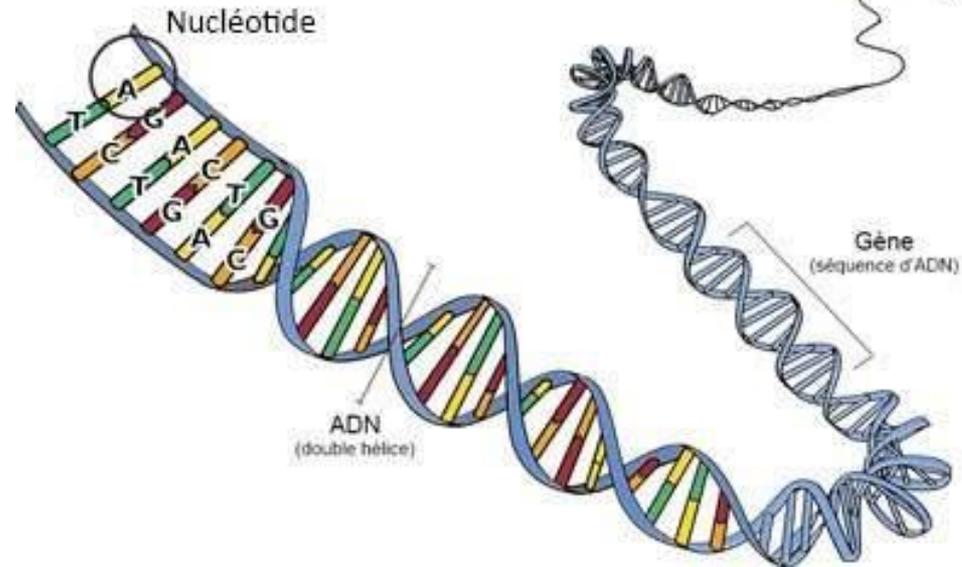
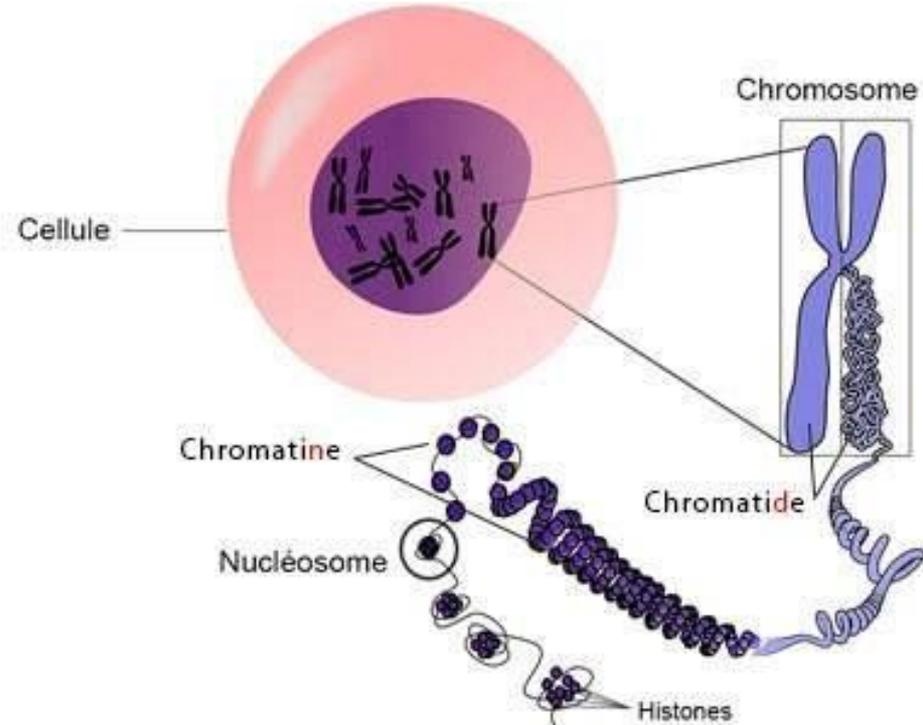
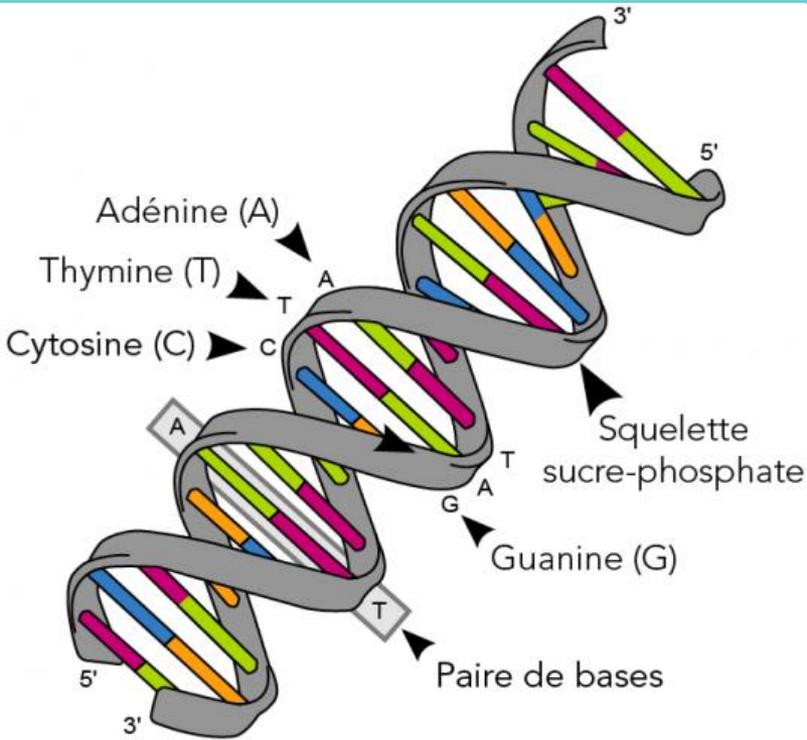
# Les anomalies génétiques ou mutations



*Anomalie génétique  
ou mutation*

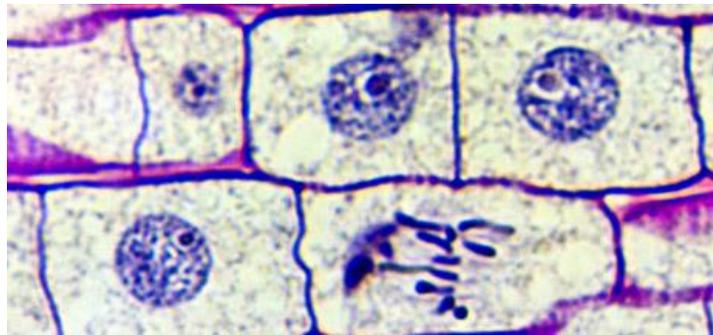
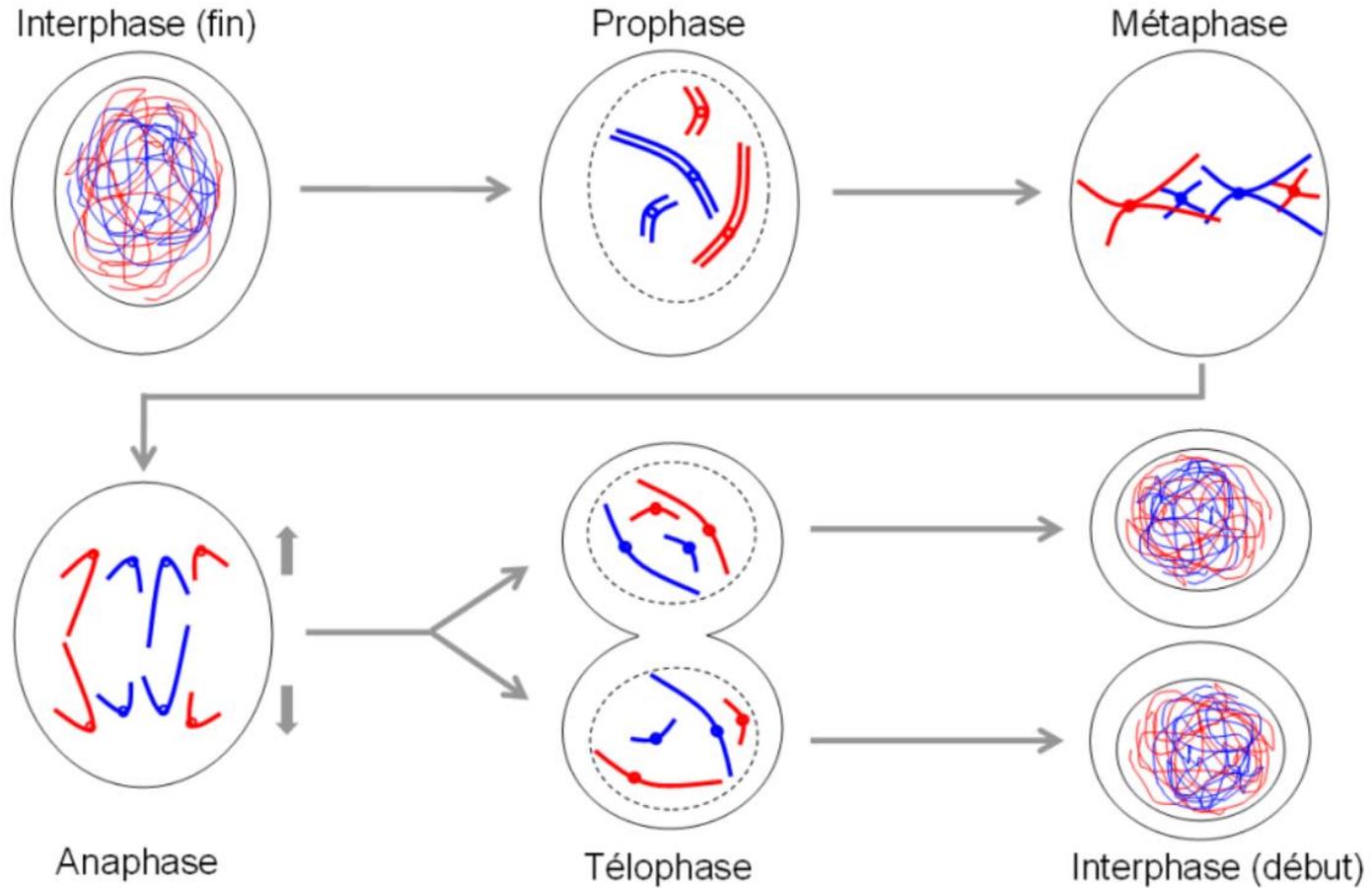






# La multiplication des cellules

# La division cellulaire et la mitose



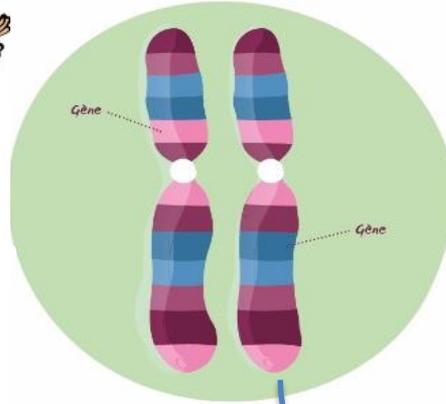
**Et comment on fait les bébés?**

# Le brassage génétique

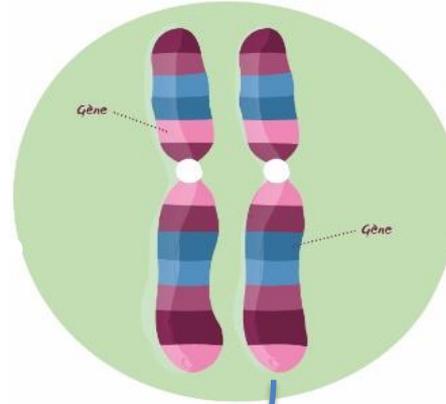
*Au hasard, je vais prendre celui-ci, ...*



**FEMME**



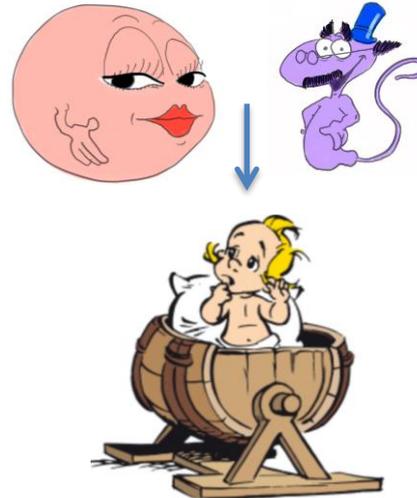
**HOMME**



*... et celui là !*



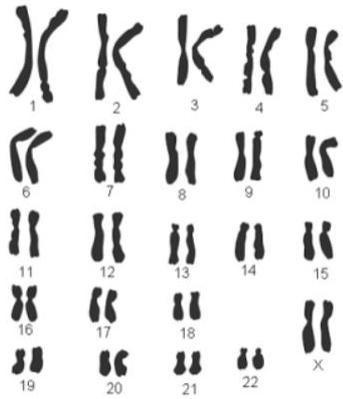
*Et voilà !*



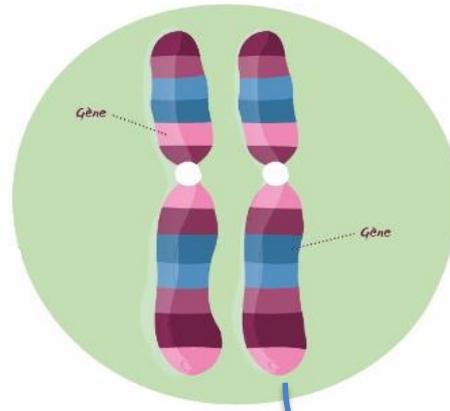
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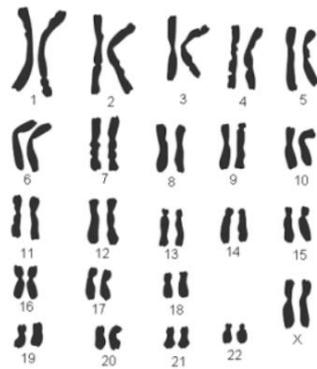
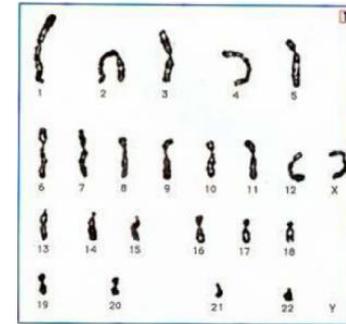
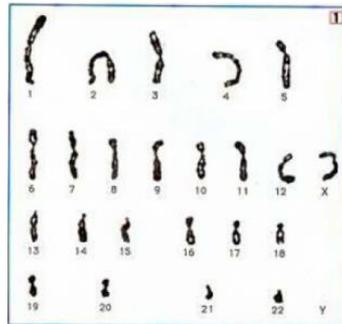
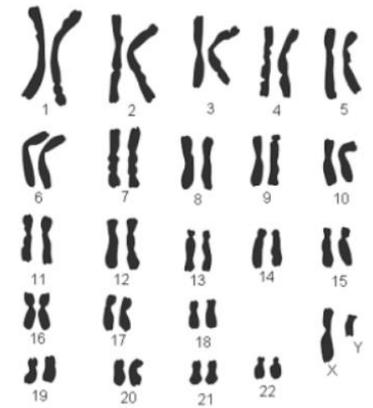
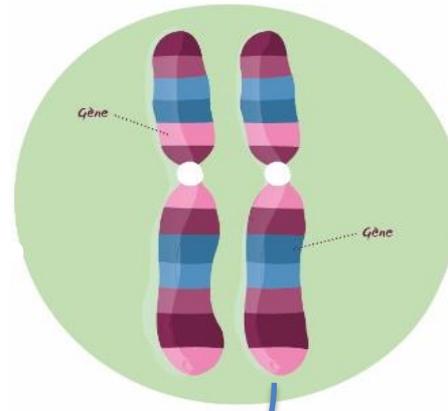
# Le brassage génétique



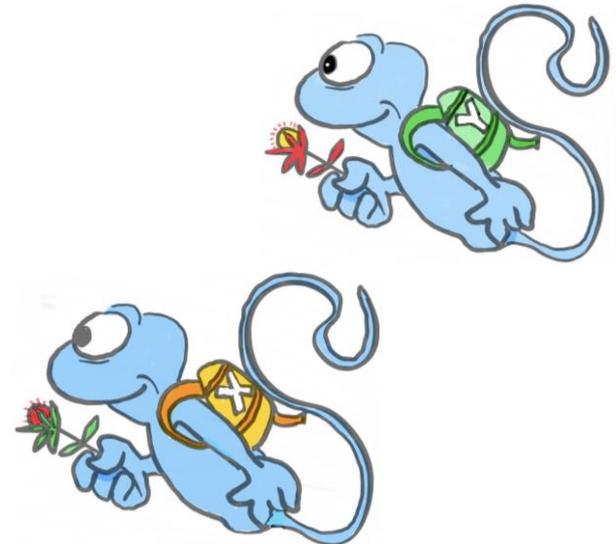
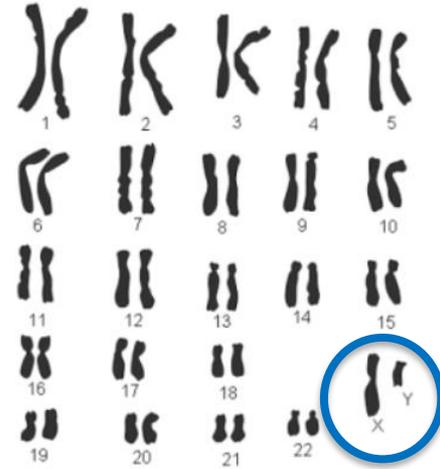
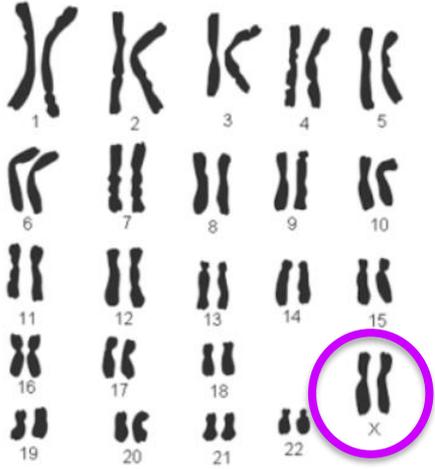
FEMME



HOMME

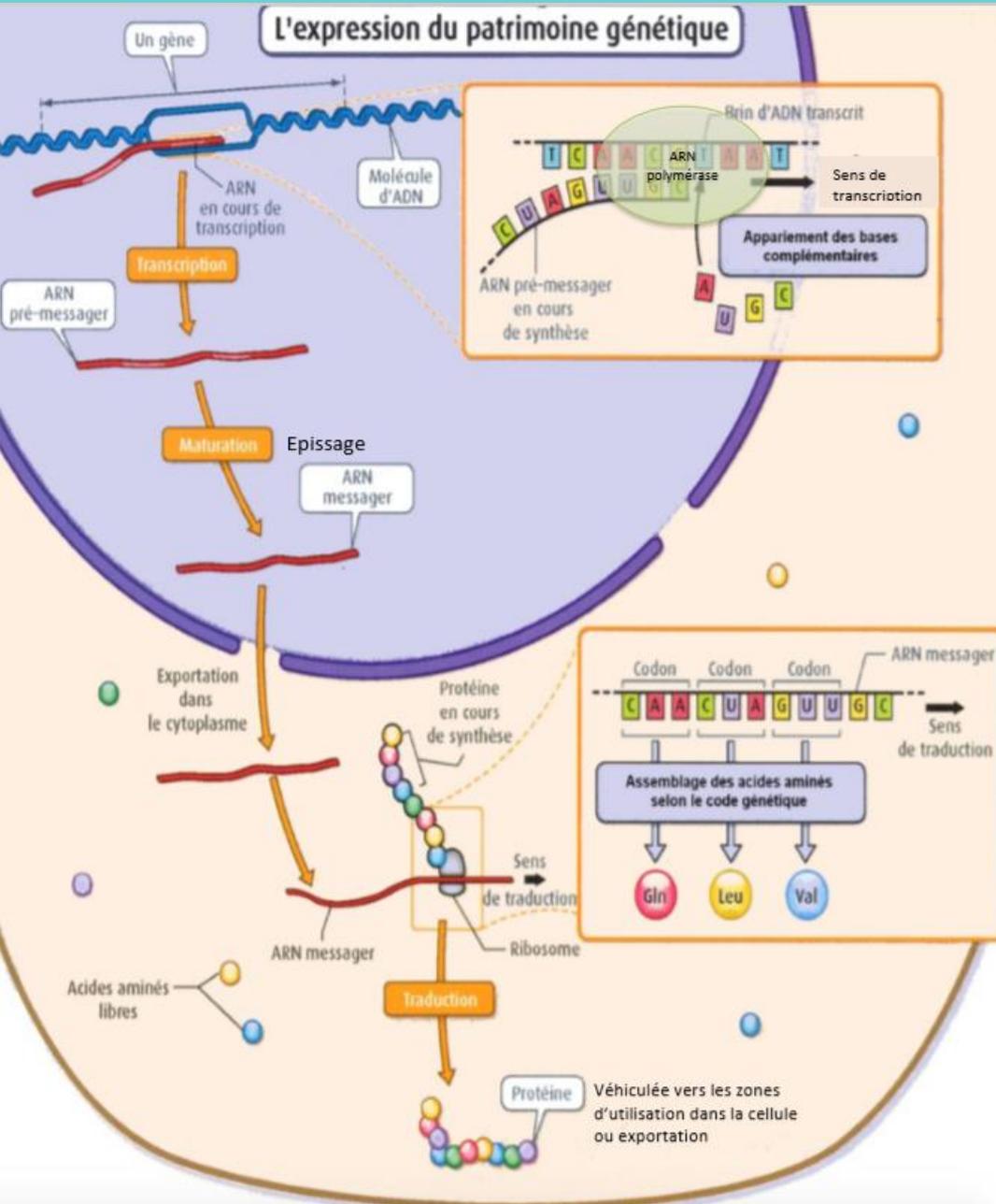


# Fille ou gars ?

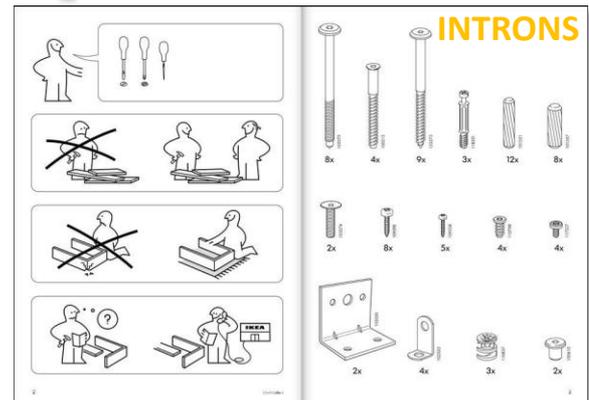
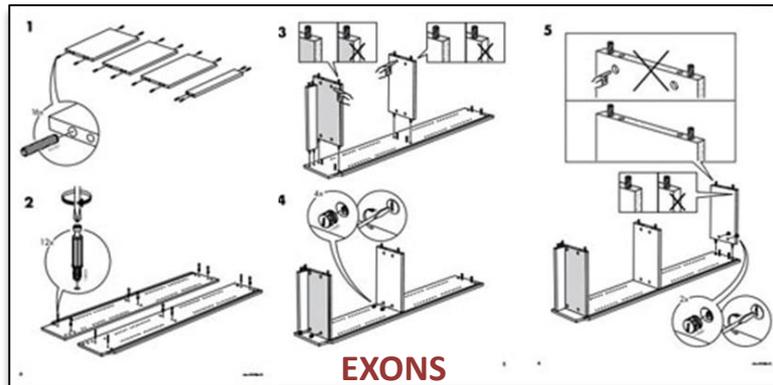
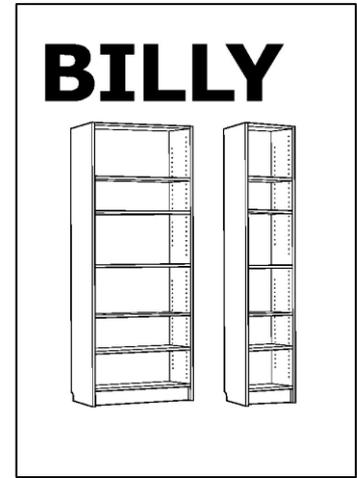
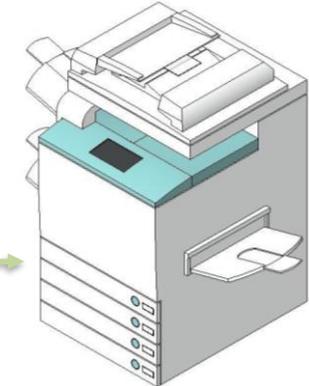
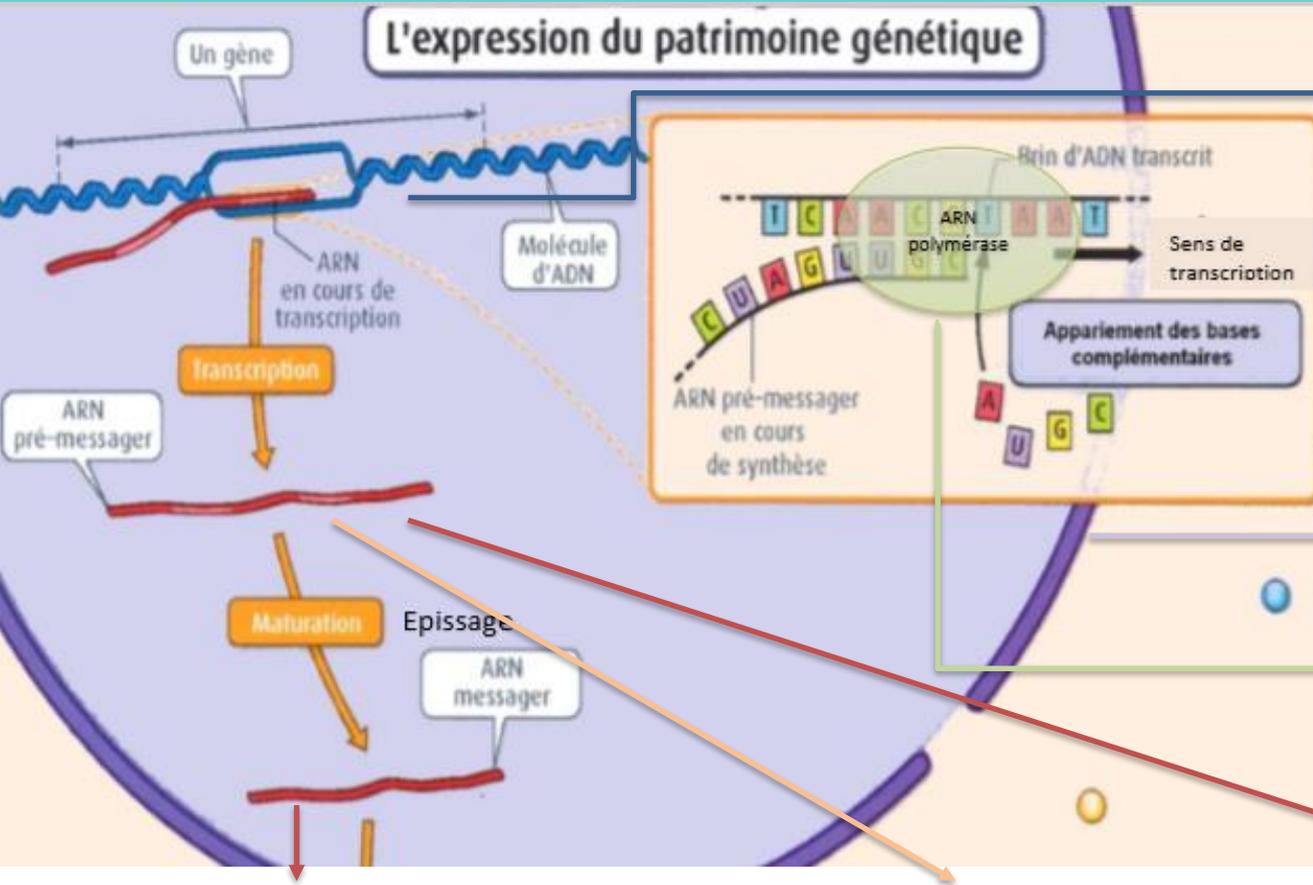


**Et après les gènes?**

# Des gènes aux protéines

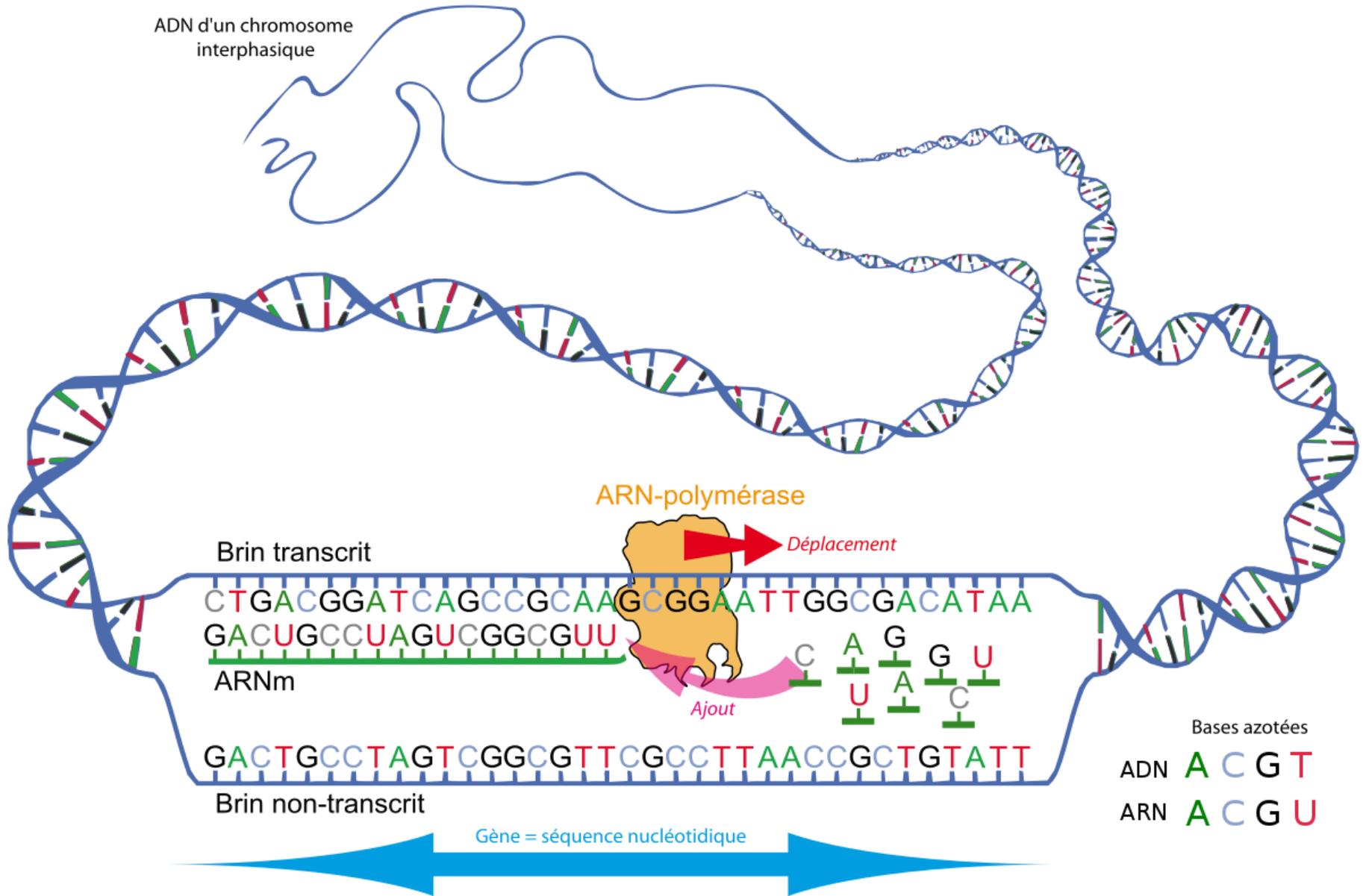


# Des gènes aux protéines

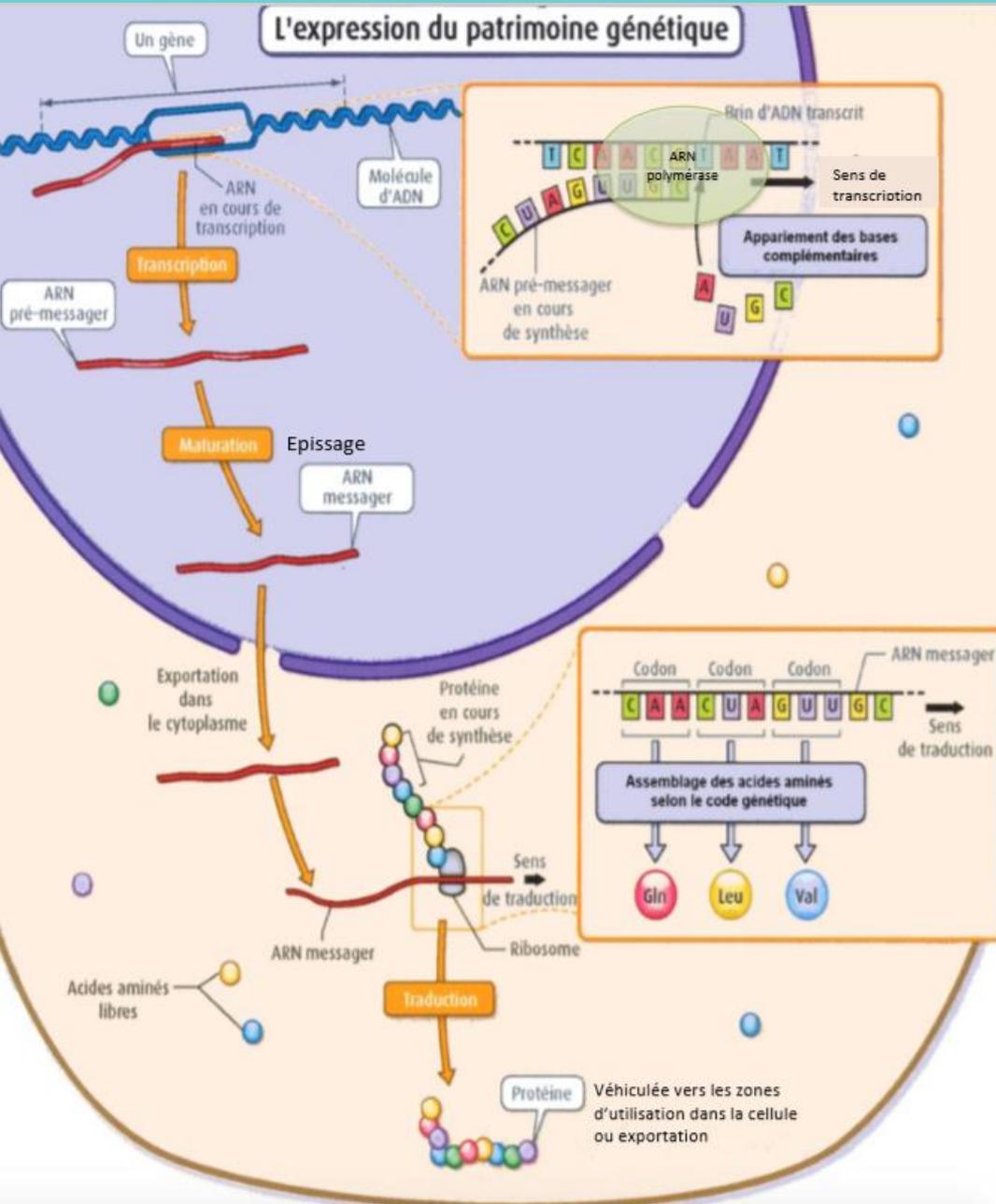


# De l'ADN à l'ARNm

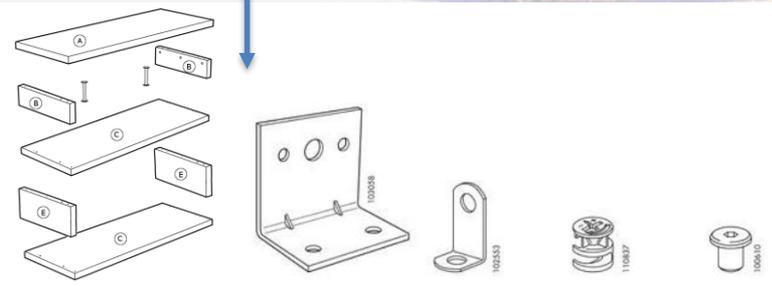
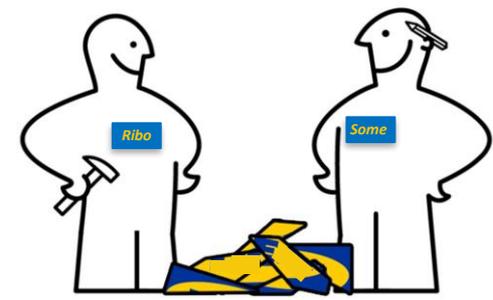
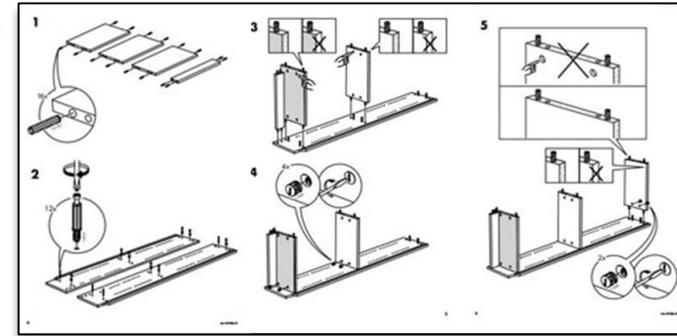
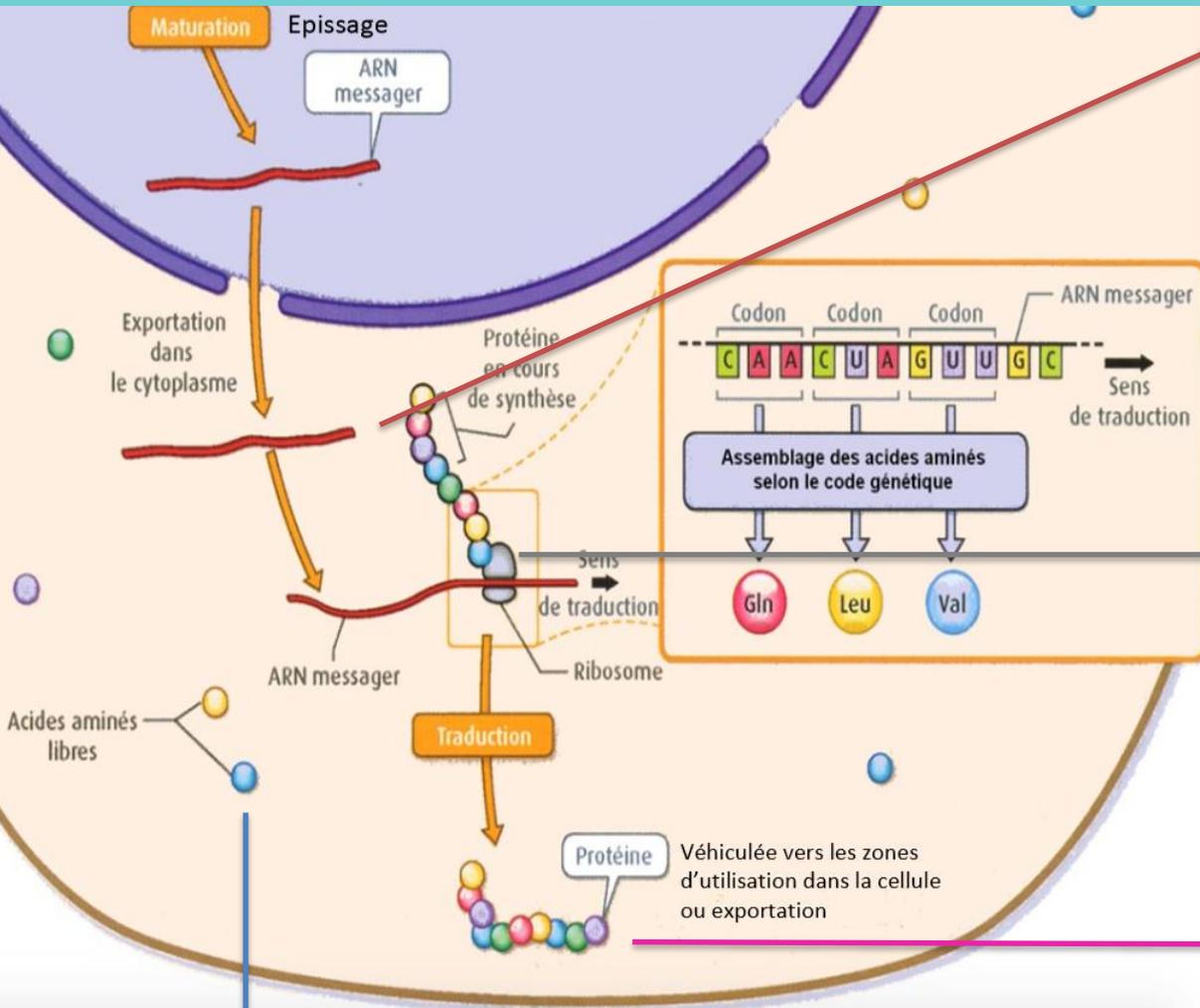
ADN d'un chromosome  
interphasique



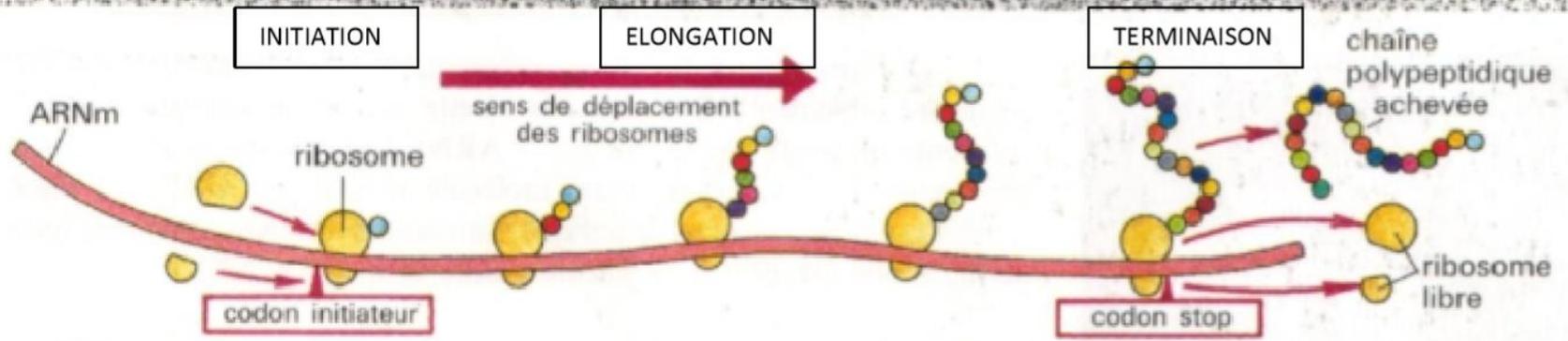
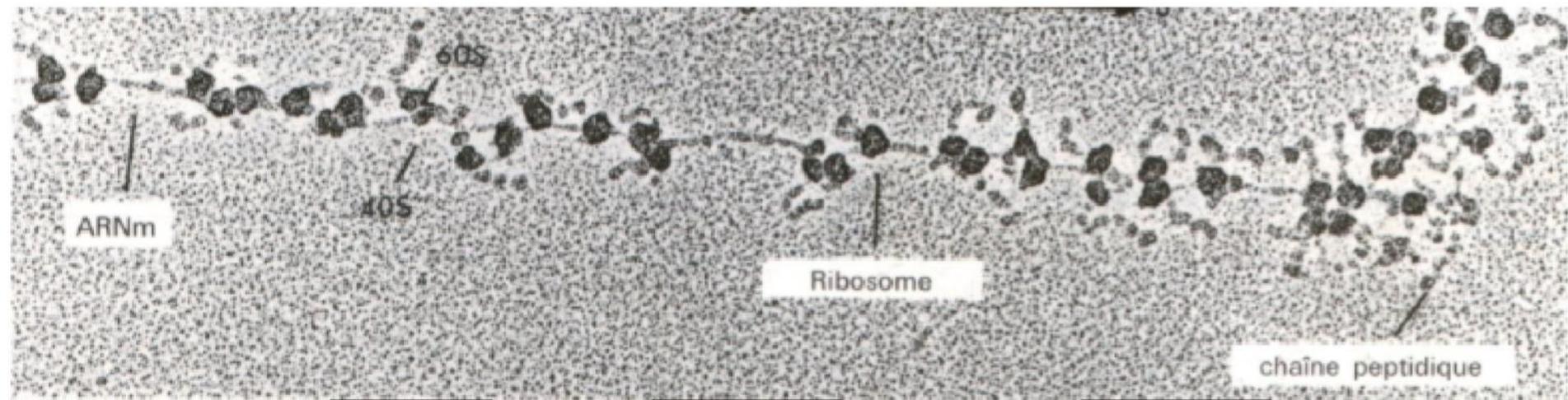
# Des gènes aux protéines



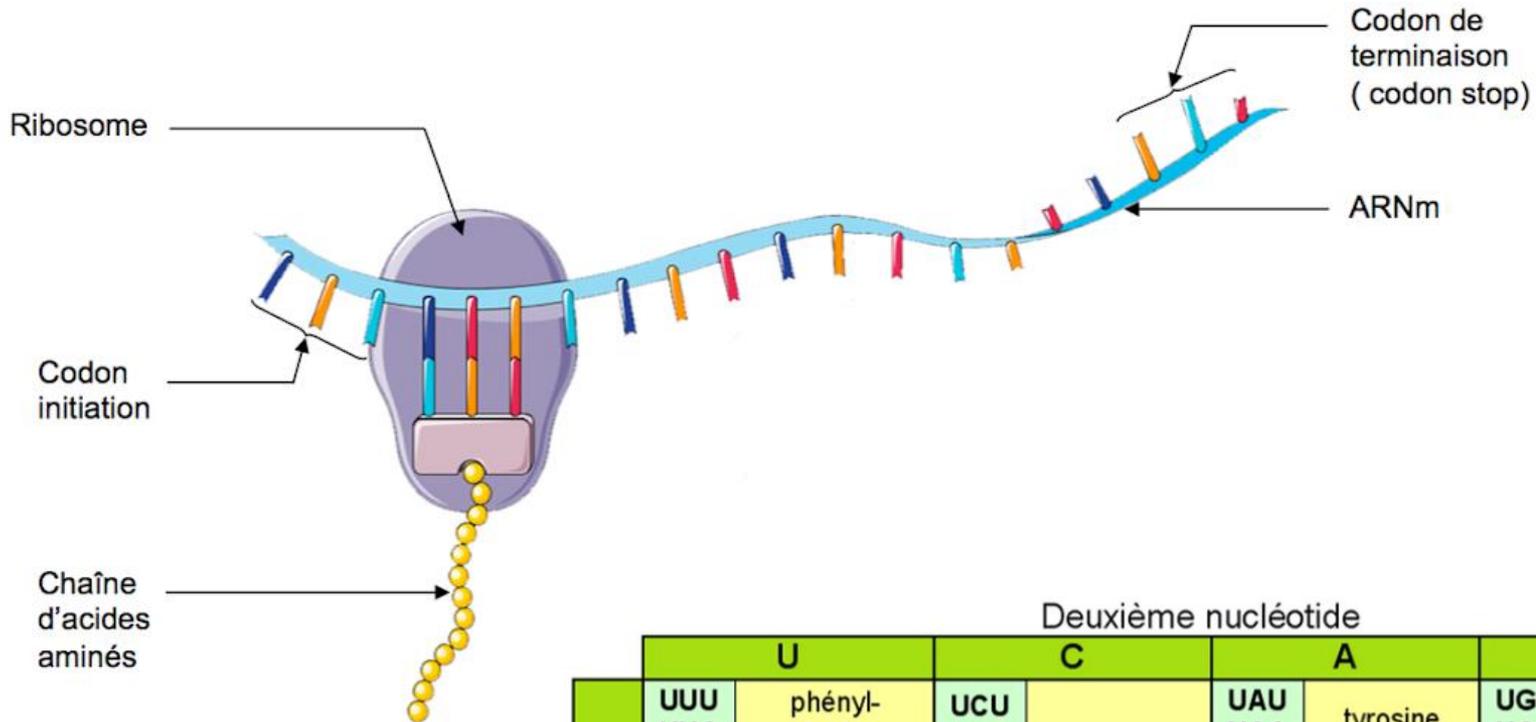
# Des gènes aux protéines



# Des gènes aux protéines



# Le code génétique

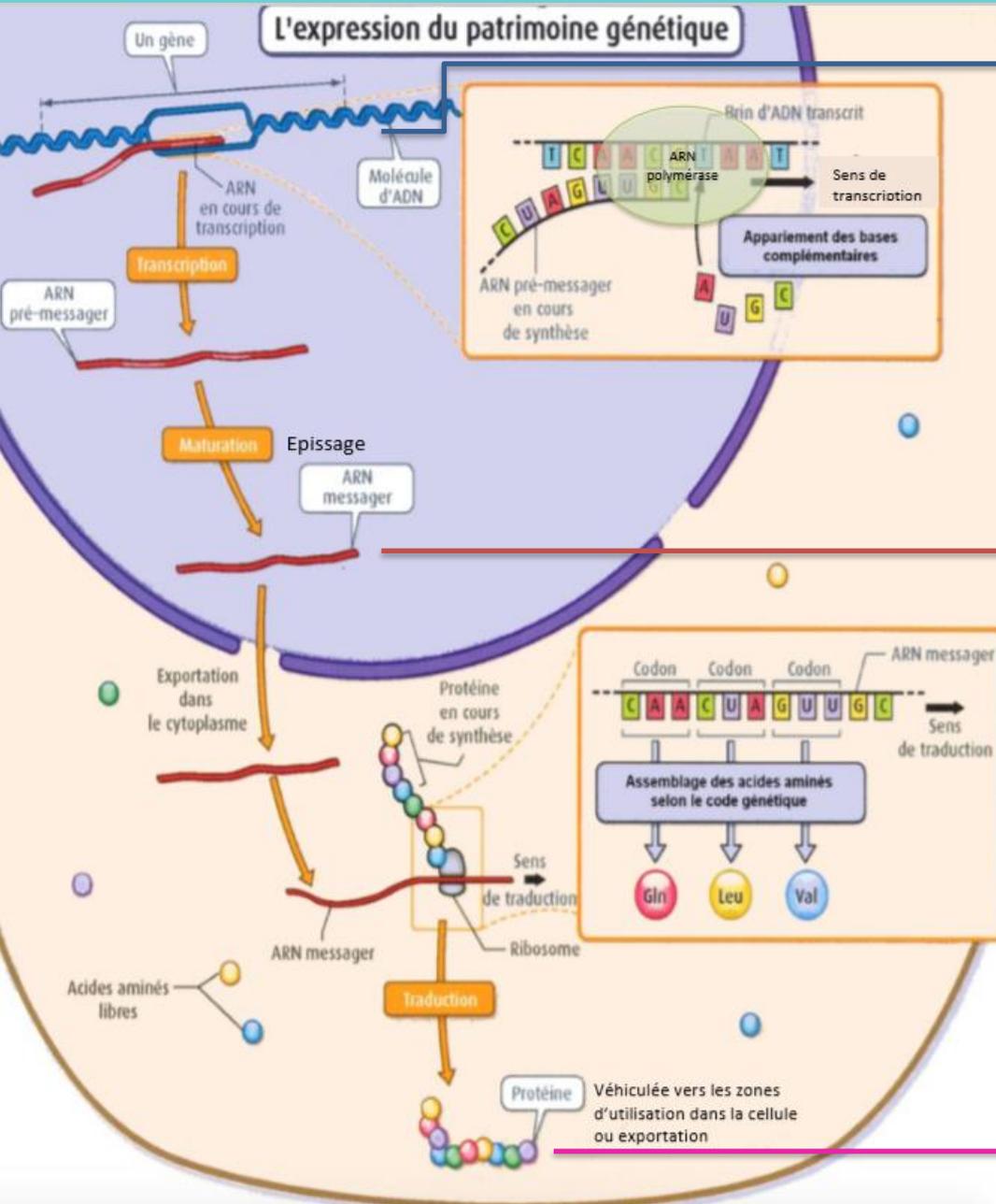


		Deuxième nucléotide								
		U		C		A		G		
U	UUU	phényl-alanine	UCU	sérine	UAU	tyrosine	UGU	cystéine	U C A G	
	UUC		UCC		UAC		UGC			
	UUA	leucine	UCA		UAA	STOP	UGA			STOP
	UUG		UCG		UAG		UGG			
C	CUU	leucine	CCU	proline	CAU	histidine	CGU	arginine	U C A G	
	CUC		CCC		CAC		CGC			
	CUA		CCA		CAA	glutamine	CGA			
	CUG		CCG		CAG		CGG			
A	AUU	isoleucine	ACU	thréonine	AAU	asparagine	AGU	sérine	U C A G	
	AUC		ACC		AAC		AGC			
	AUA		ACA		AAA	lysine	AGA			
	AUG	méthionine	ACG		AAG		AGG			arginine
G	GUU	valine	GCU	alanine	GAU	acide aspartique	GGU	glycine	U C A G	
	GUC		GCC		GAC		GGC			
	GUA		GCA		GAA	acide glutamique	GGA			
	GUG		GCG		GAG		GGG			

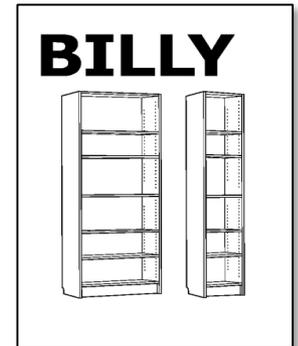
Premier nucléotide

Troisième nucléotide

# Des gènes aux protéines



Transcription



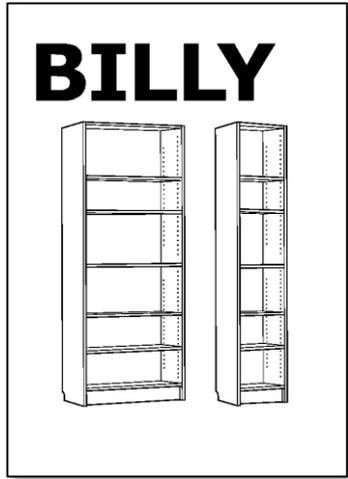
Traduction



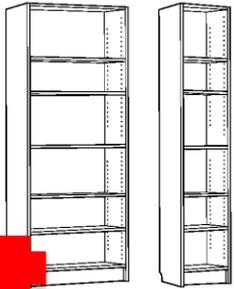
# Variation? Mutation?



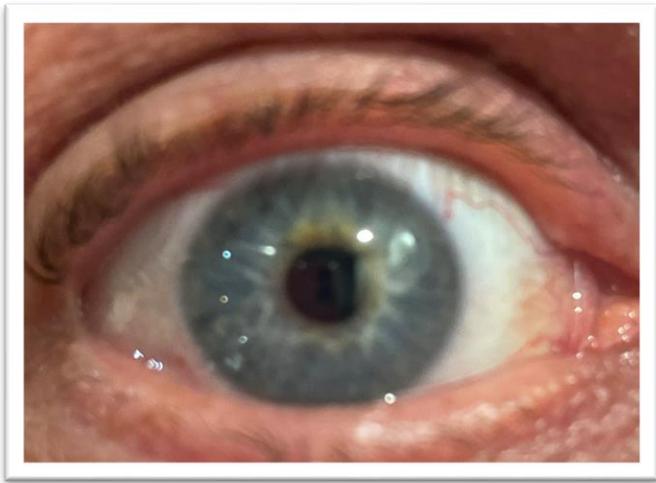
# Variations

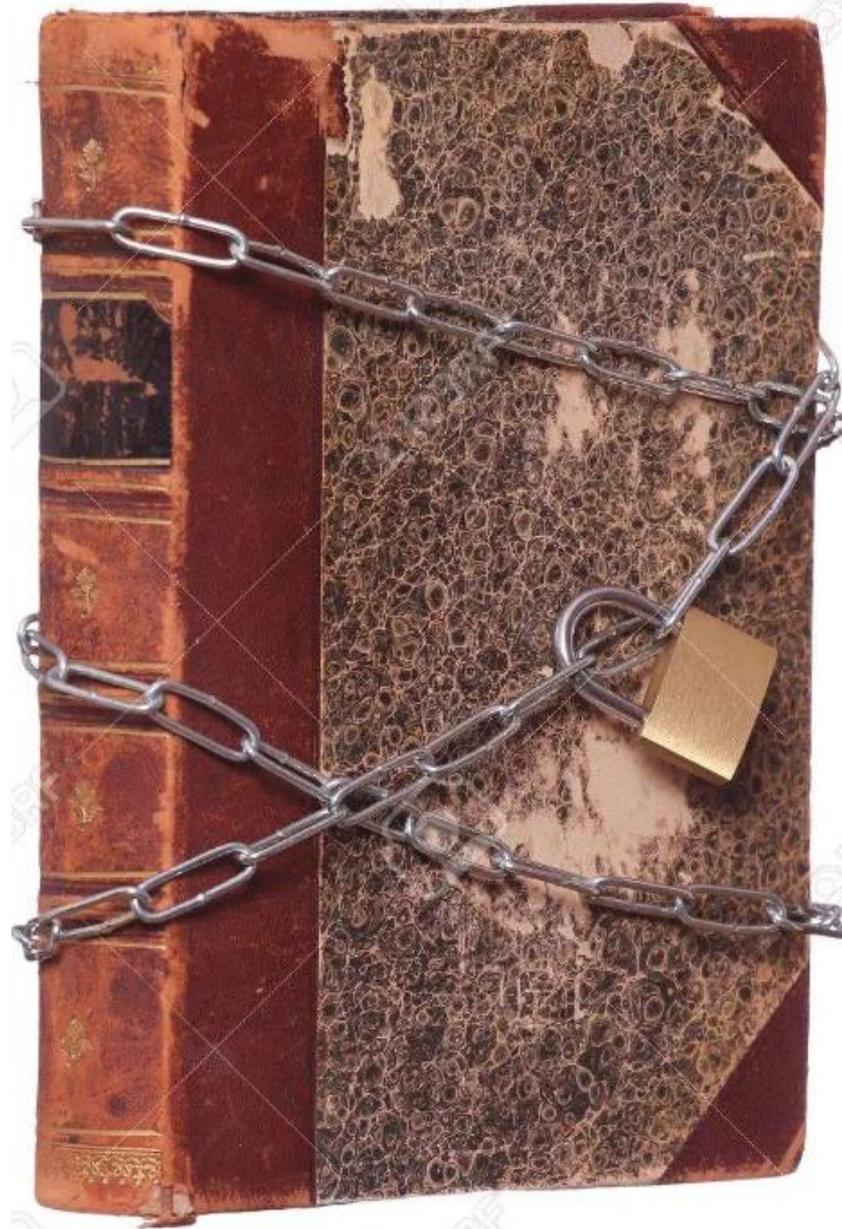


# BILLY



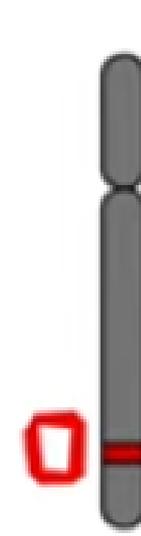
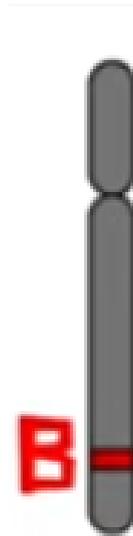
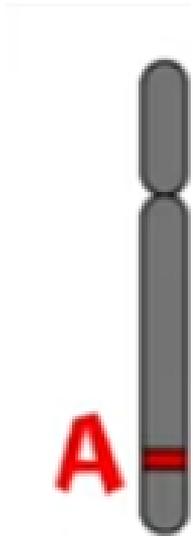
# Et pourquoi j'ai que du bleu dans les yeux?





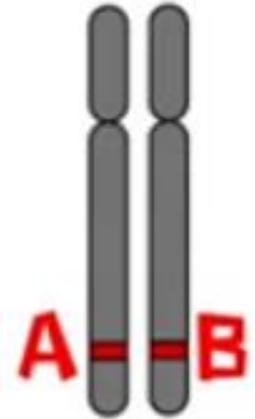
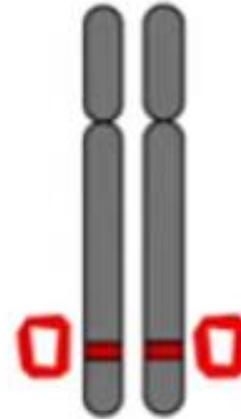
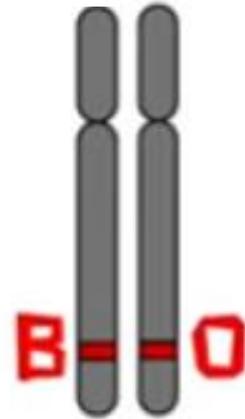
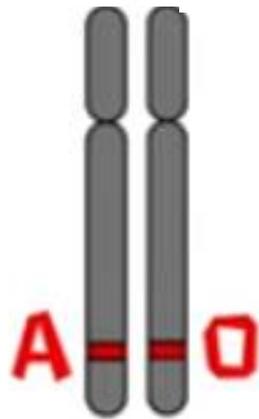
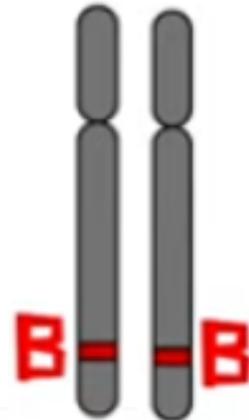
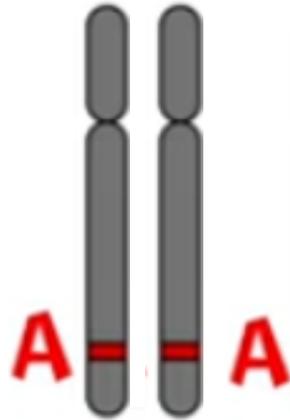
# Un exemple de gène

## Chromosome 9



# Groupes sanguins A, B et O

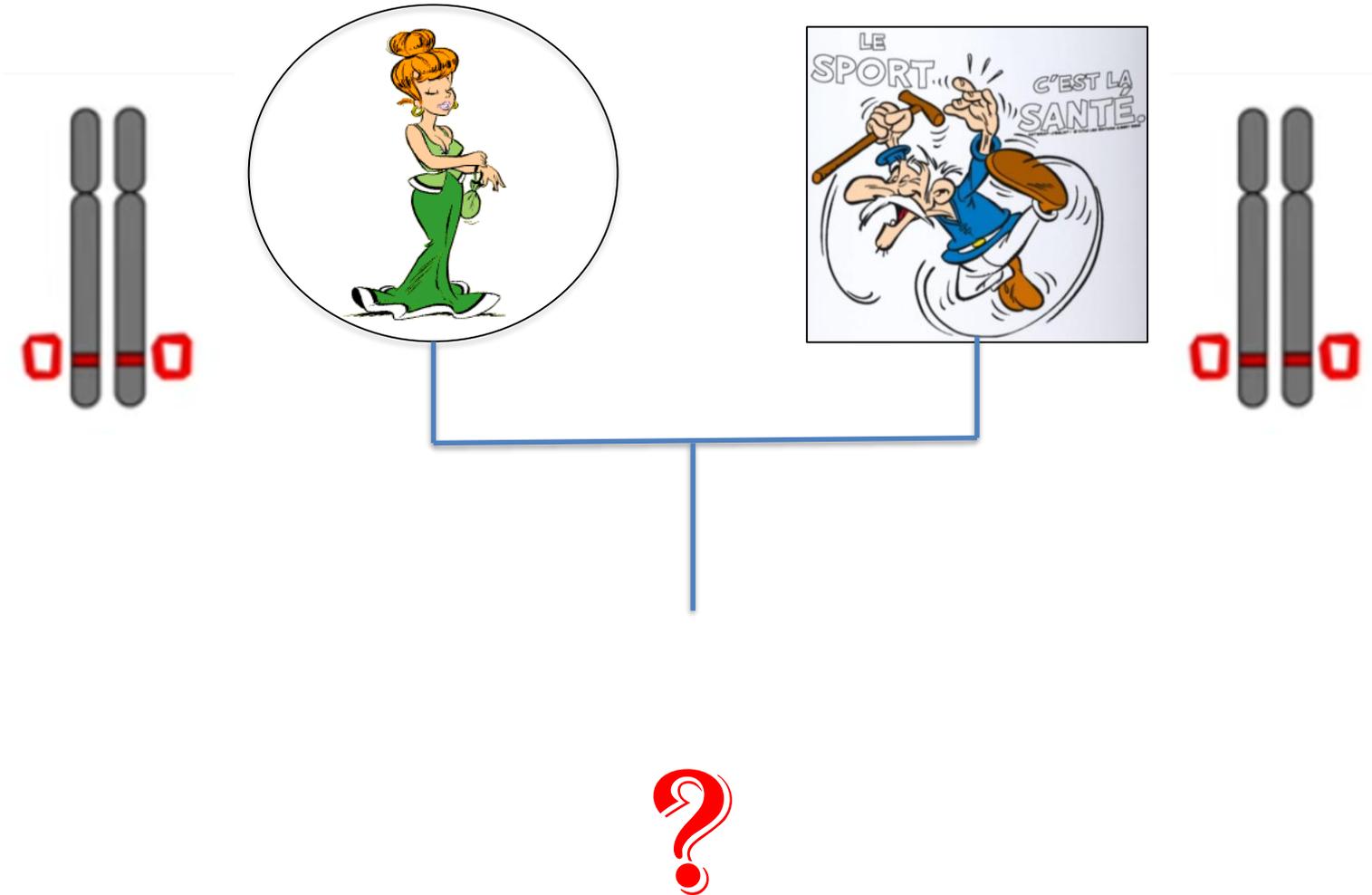
Génotype



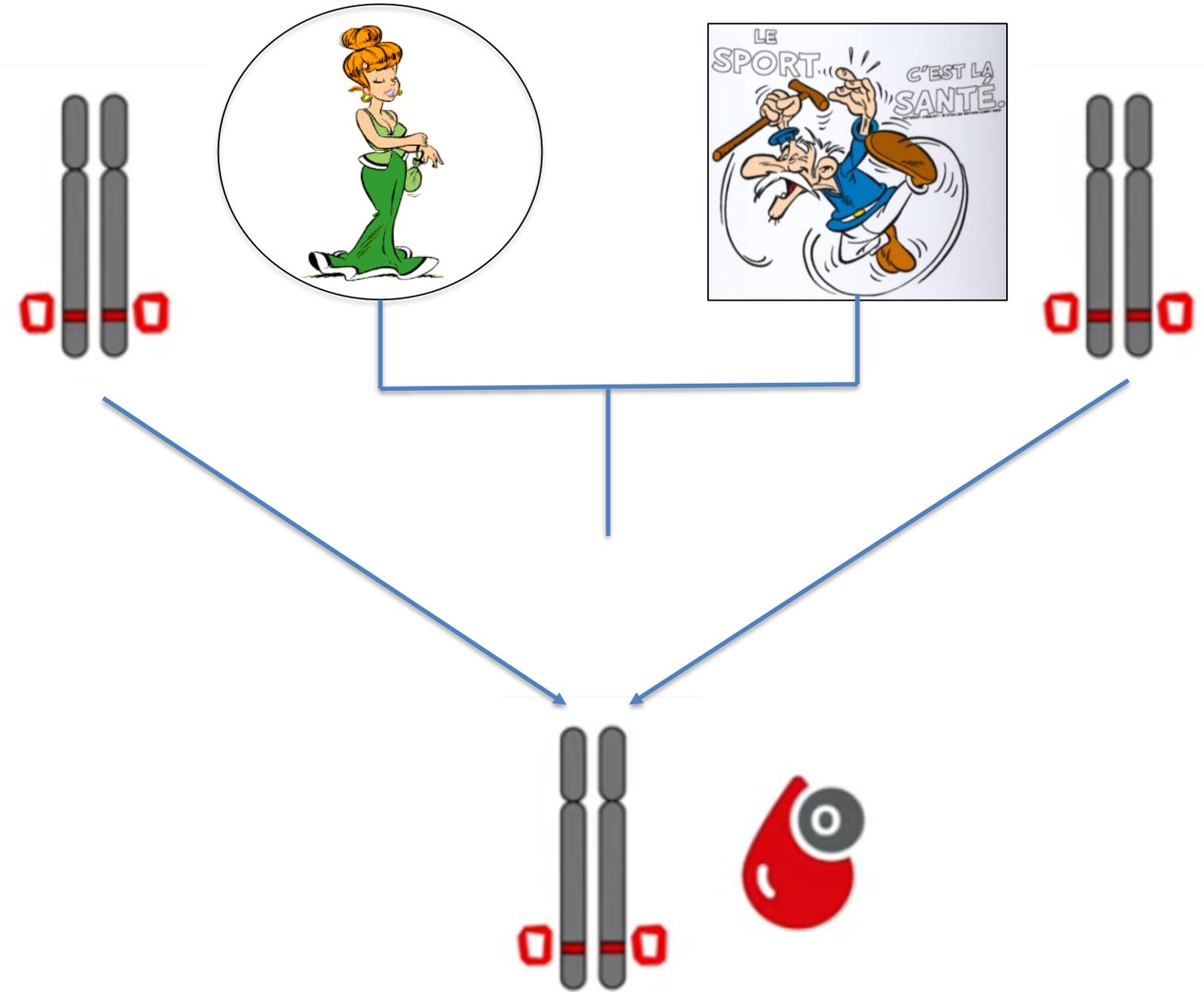
Phénotype



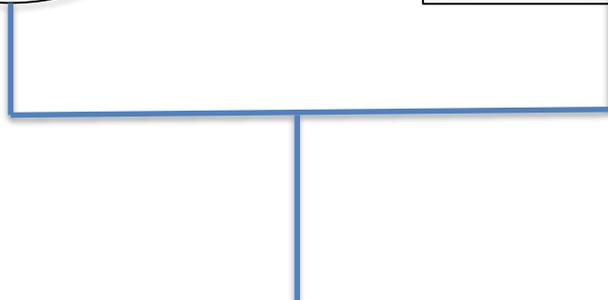
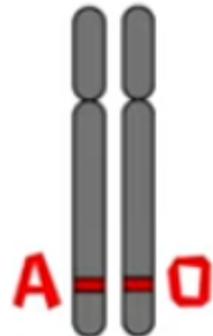
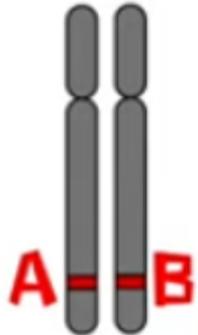
# Groupes sanguins A, B et O



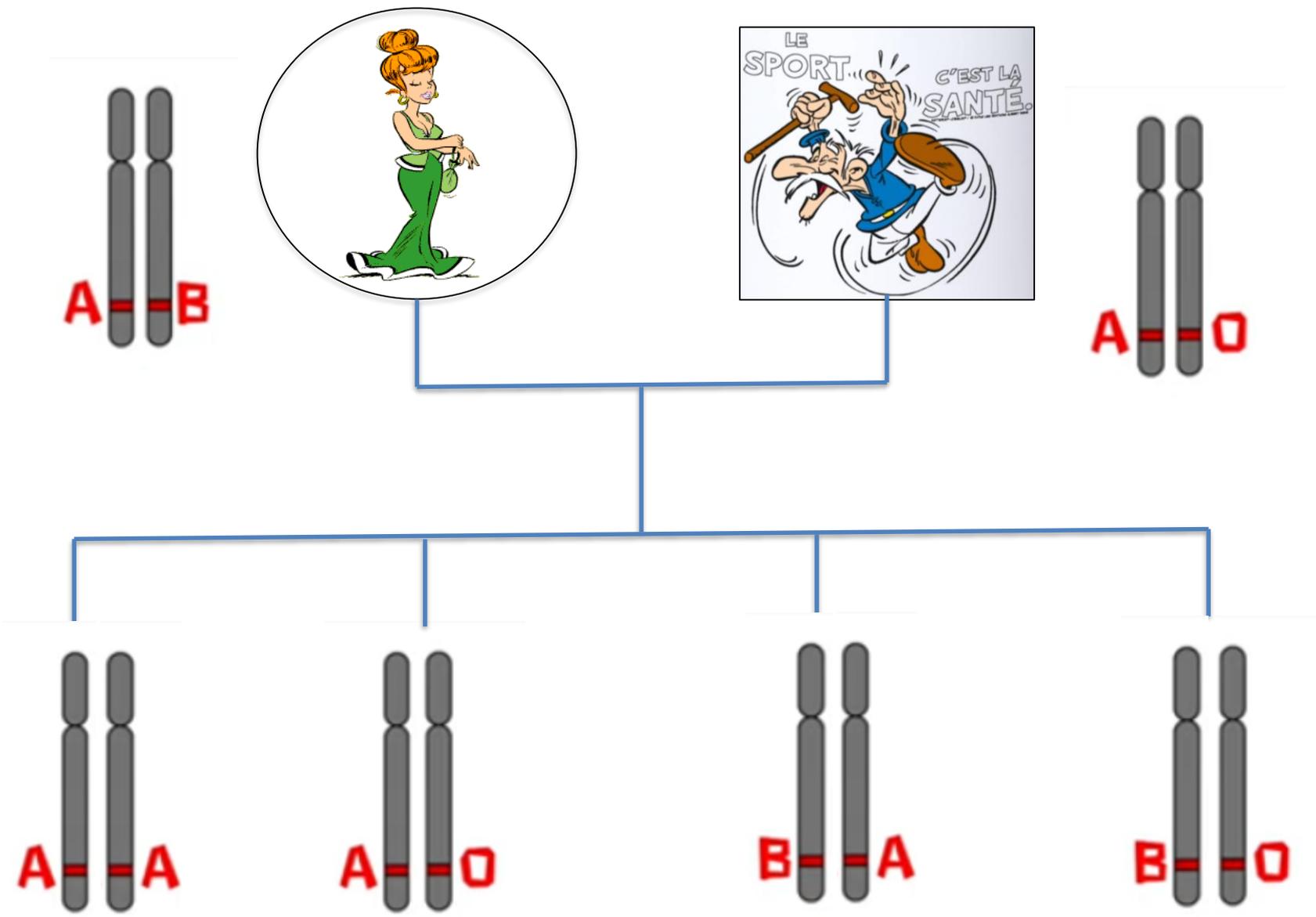
# Groupes sanguins A, B et O



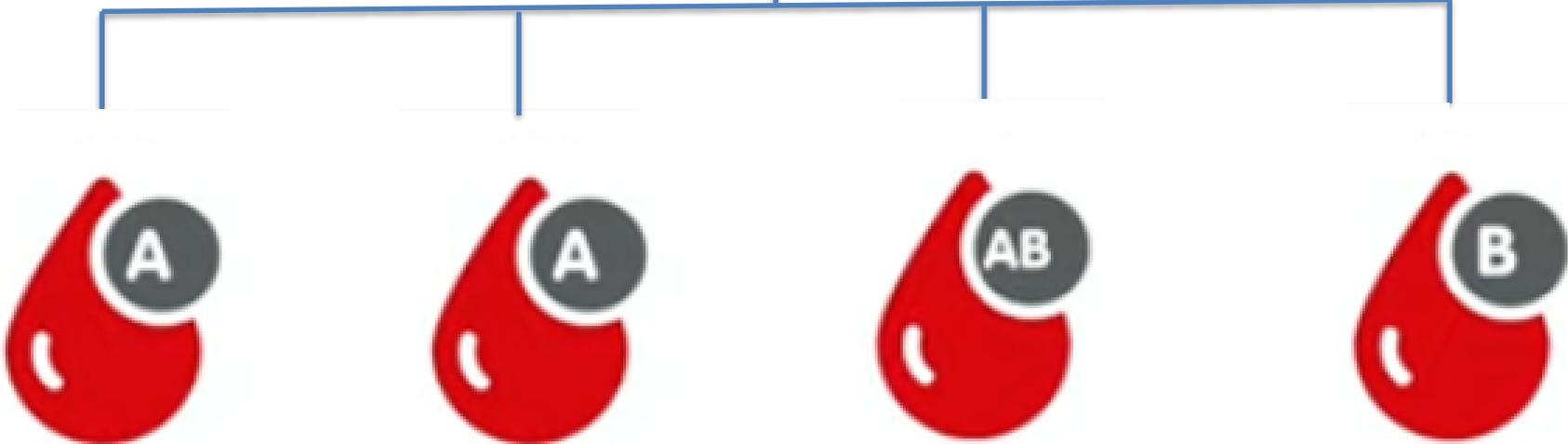
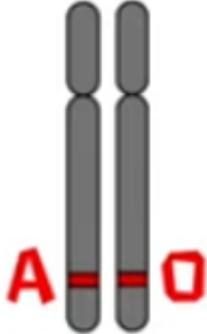
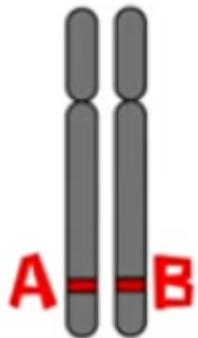
# Groupes sanguins A, B et O



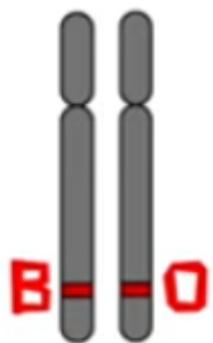
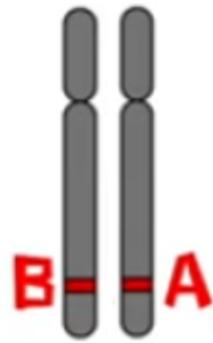
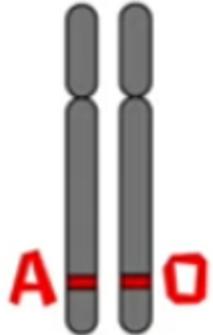
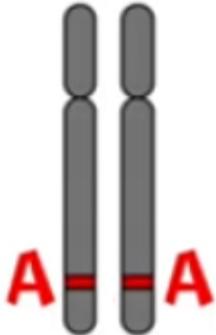
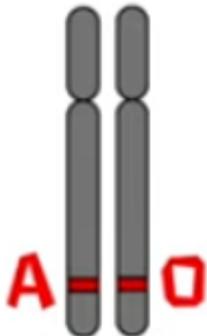
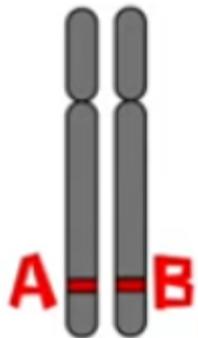
# Groupes sanguins A, B et O



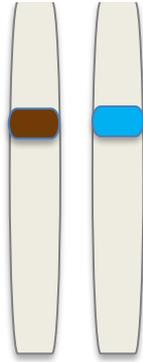
# Groupes sanguins A, B et O



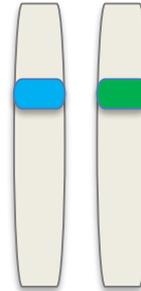
# Groupes sanguins A, B et O



Chromosome 15  
Gène Br (B, b)



Chromosome 19  
Gène Ve (V, v)

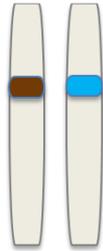


- Règles de dominance des allèles
- **B est dominant** sur V et b → 
  - **V est dominant** sur b → 
  - **b est récessif** sur à V et B → 

# Couleur des yeux

Chromosome 15  
Gène Br (B, b)

Chromosome 19  
Gène Ve (V, v)



BB	VV
Bb	VV
BB	Vb
Bb	Vb
Bb	bb
bb	VV
bb	Vb
bb	bb

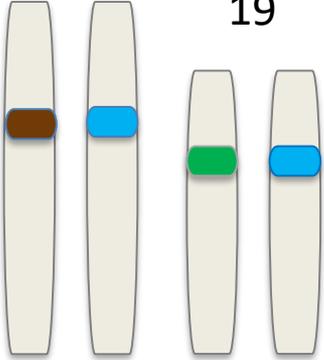


# Couleur des yeux



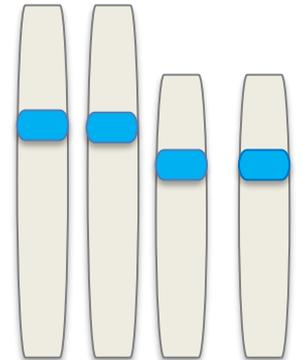
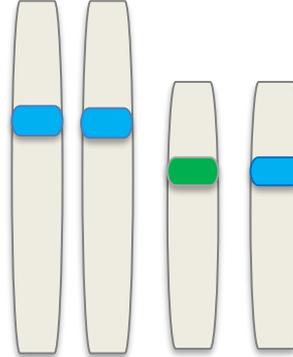
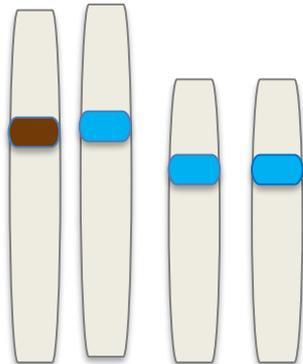
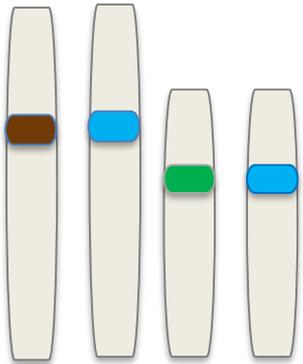
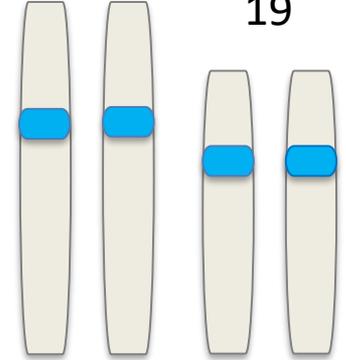
15

19

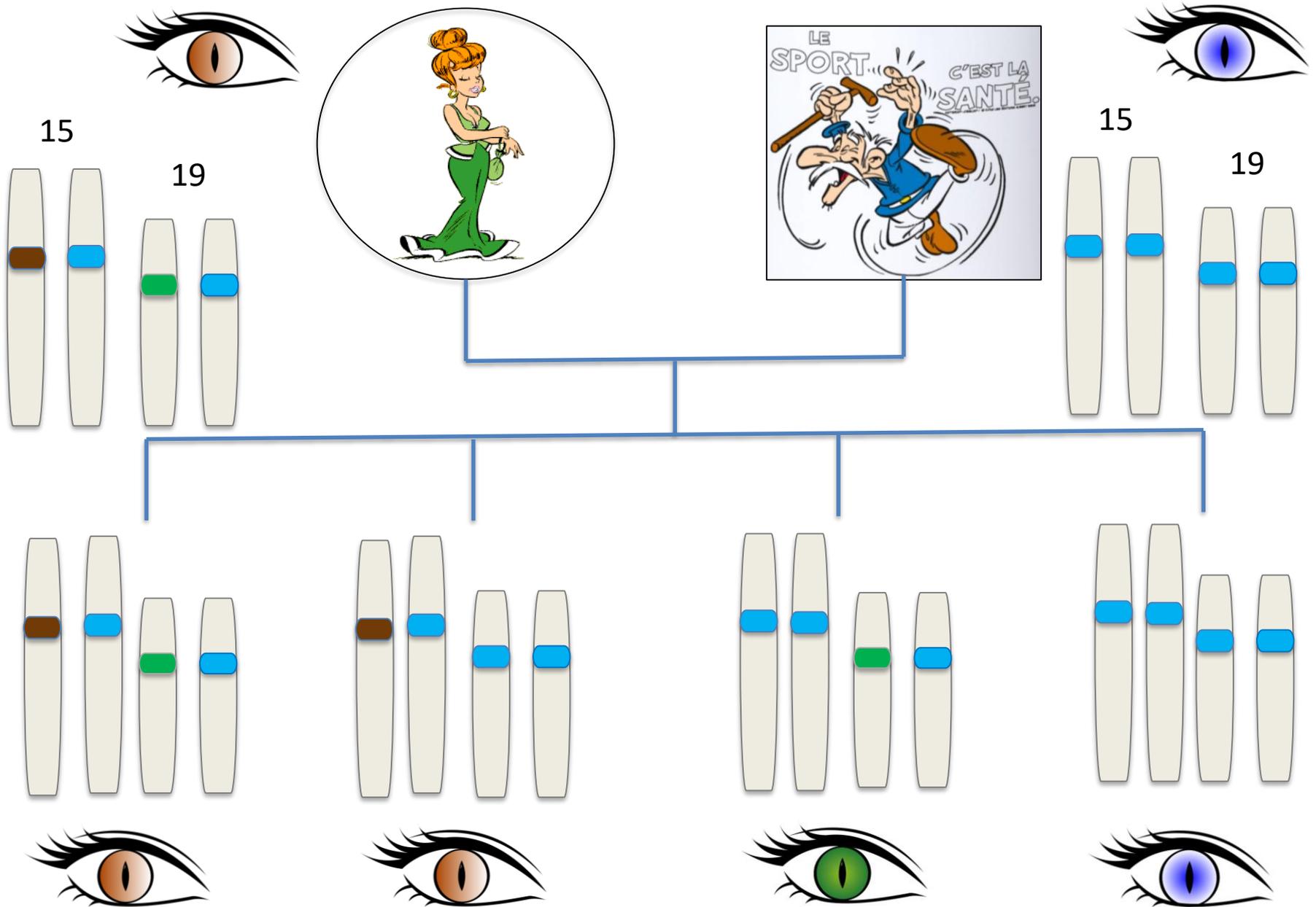


15

19

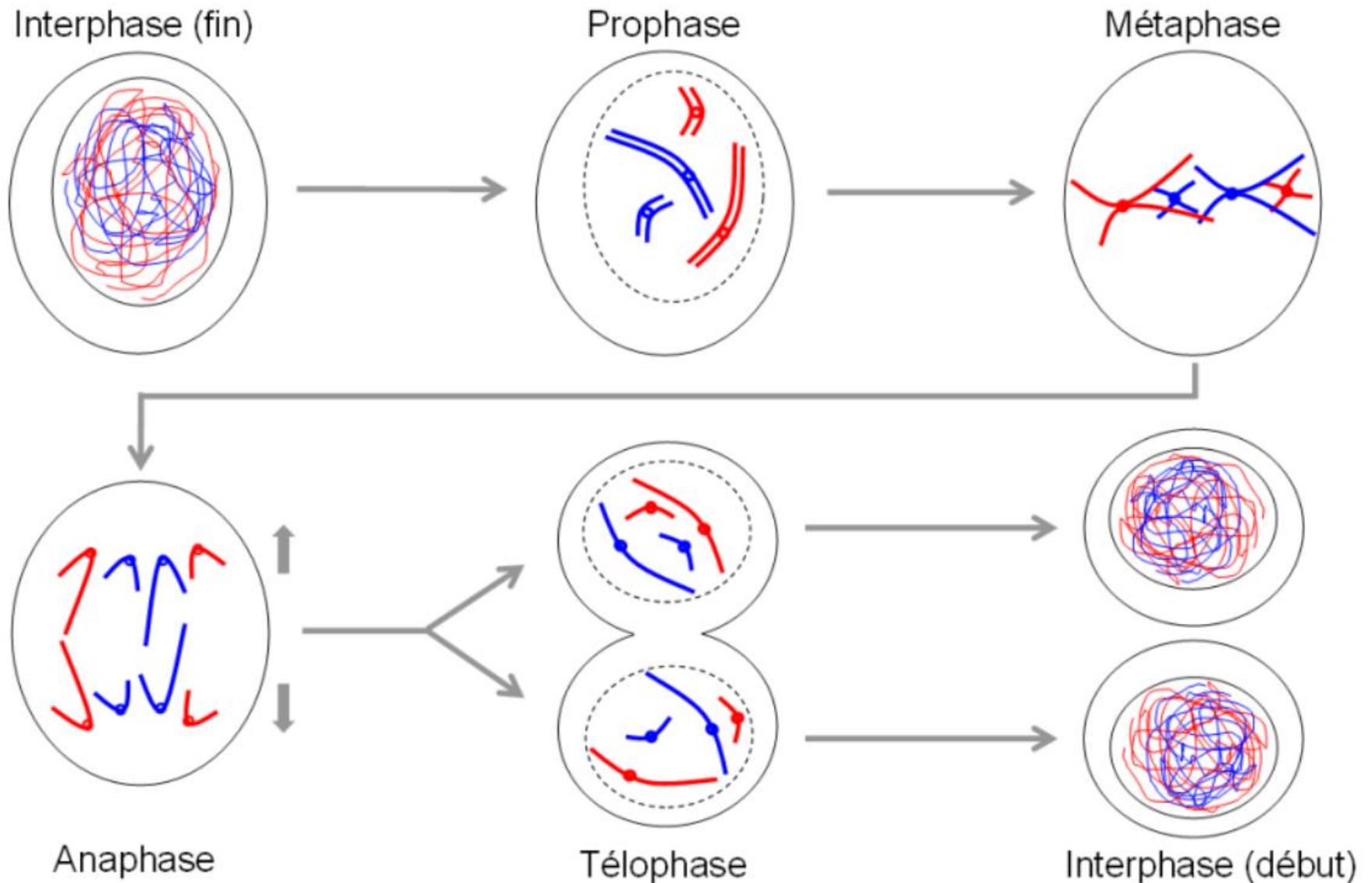


# Couleur des yeux



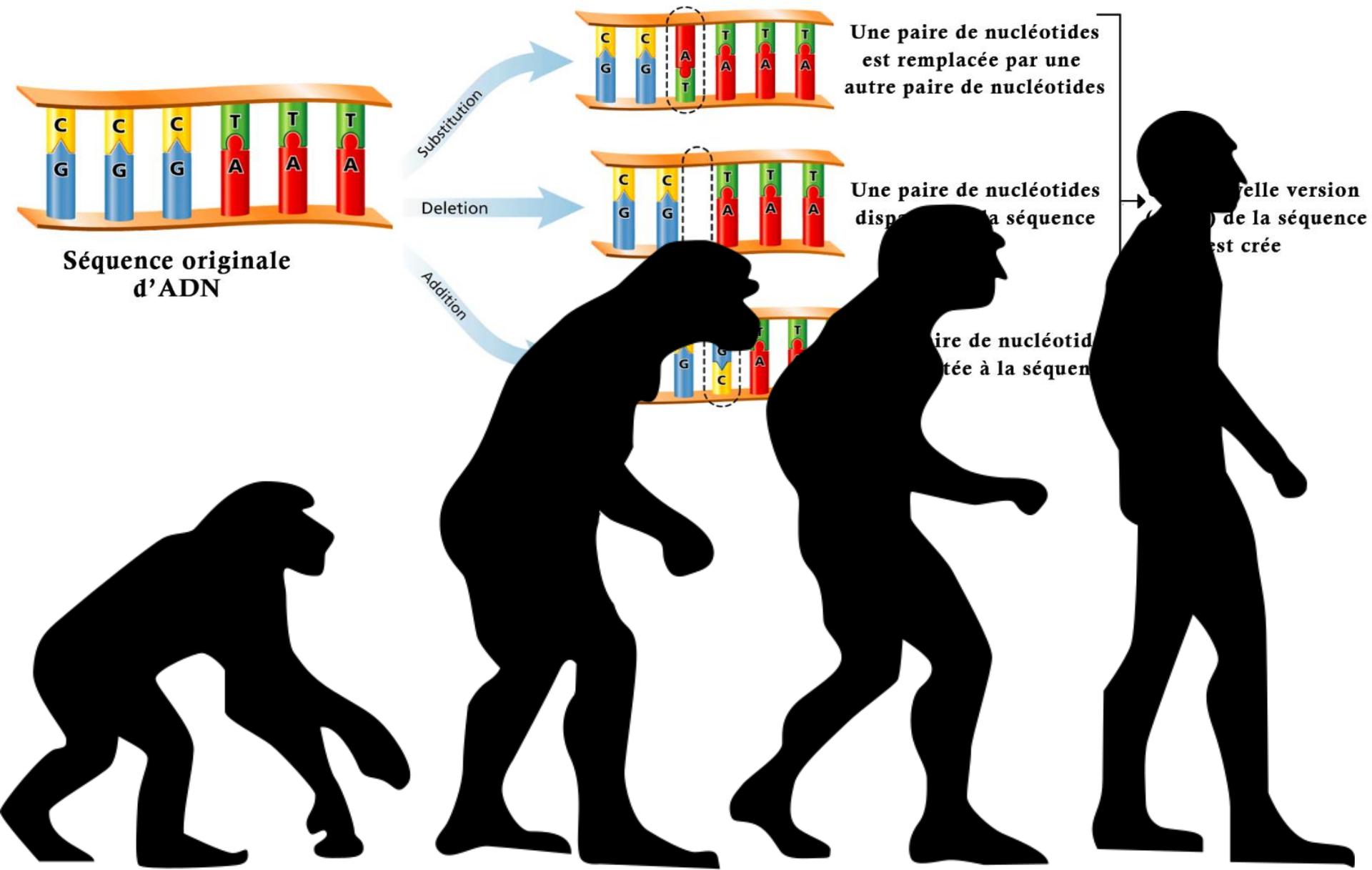
**Pourquoi nous avons des variations?**

# La division cellulaire et la mitose – la réplication de l'ADN





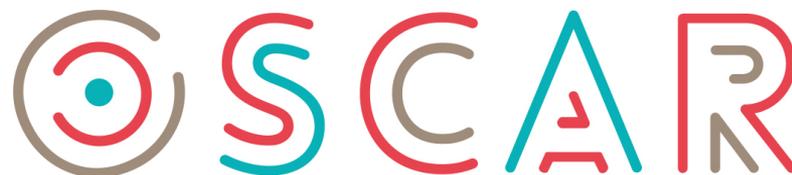
# La division cellulaire et la mitose – la réplication de l'ADN



# Tout savoir sur la transmission des maladies génétiques

Vendredi 13 mai

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# Conclusion

# Conclusion

Traduction

ARN polymérase

Gène

Mitose

Génotype

Epigénétique

Ribosome

Intron

Méiose

Acides nucléiques

Phénotype

Transcription

Chromosomes

Acide desoxyribonucléique

Brassage génétique

Epissage

Exon

Réplication

Ribosomes



## Le Centre de Référence des Maladies du métabolisme du Calcium et du Phosphate, Hôpital Bicêtre

Agnes Linglart  
Anya Rothenbuhler  
Claire Bouvatier  
Anne Sophie Lambert  
Julia André, MA Trouvin

## Le Centre de Référence des Maladies Osseuses Constitutionnelles, Hôpital Necker

Valérie Cormier Daire  
Geneviève Baujat  
Caroline Michot  
Pauline Marzin



*Merci à Hergé, Uderzo, Peyo et J-R Girerd pour les illustrations.  
Merci à Billy, grâce à qui j'ai développé une expertise inédite.*

*\* Toute ressemblance avec une grande marque d'ameublement existante serait purement fortuite !*

On se revoit bientôt pour la suite des aventures, dans.....

# Tout savoir sur la transmission des maladies génétiques

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