

Figure 4-13 Cell mitosis. A and H represent the non-dividing cell; B, C, and D represent prophase; E and F represent anaphase; and G represents telophase.

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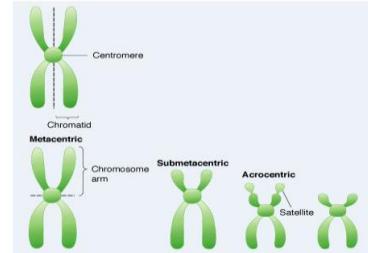
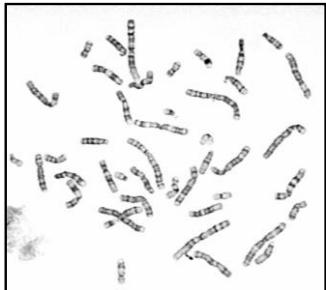


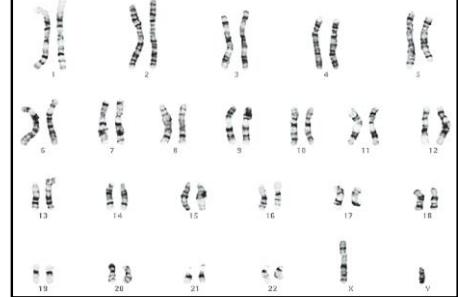
Figure 6-11 Three basic shapes and the component parts of human metaphase chromosomes. The relative size of the satellite on the acrocentric is exaggerated for visibility. (Adapted from Cormack D.H. [1993]. *Essential histology*. Philadelphia: J.B. Lippincott.)

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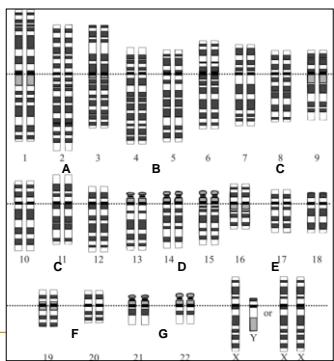
Bandeo G (Giemsa + Tripsina)



Cariotipo bandeadido G

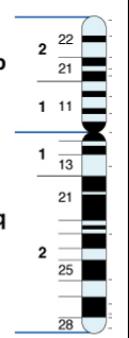


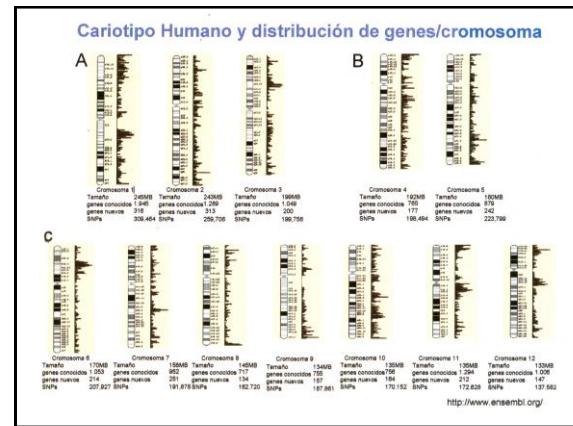
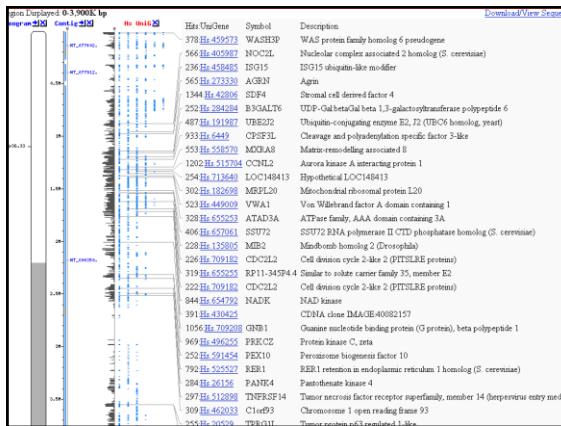
Representación gráfica del cariotipo humano normal (Idiograma).



ISCN

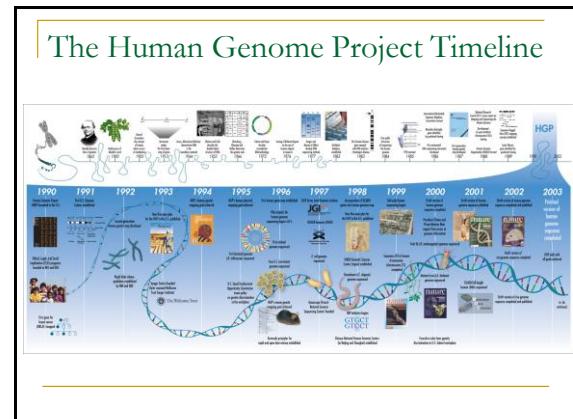
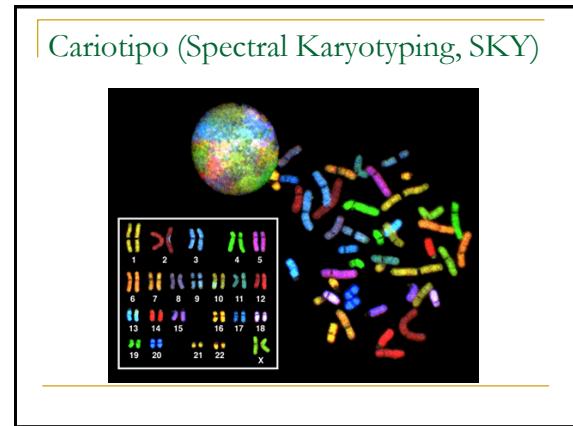
- International System for Human Cytogenetics Nomenclature





PRINCIPALES CARACTERÍSTICAS ESTRUCTURALES Y FUNCIONALES DE LOS COMPARTIMENTOS GENÓMICOS G⁺ Y G⁻

	COMPARTIMENTO G ⁺ (Bandas oscuras)	COMPARTIMENTO G ⁻ (Bandas claras)
Composición nucleotídica principal	Ricas en bases A - T	Ricas en bases G - C
Replicación en periodo S	En S tardío	En S temprano
Densidad génica	Baja	Alta
Tipo de genes incluidos	Principalemente genes "tejido específicos"	Principalemente genes "house-keeping"
Actividad transcripcional	Baja	Alta
Actividad recombinacional	Baja	Alta
Riqueza en familias de DNA repetido disperso	Ricas en LINEs (L1)	Ricas en SINES (Alu1)



Proyecto Genoma Humano

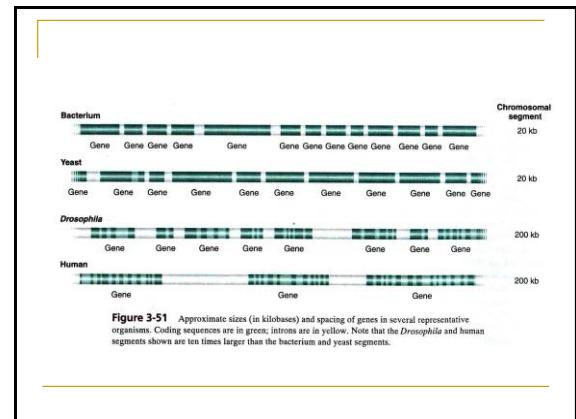
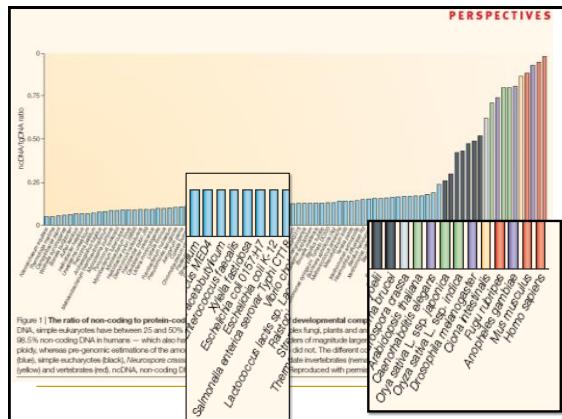
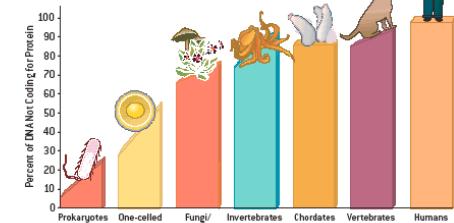


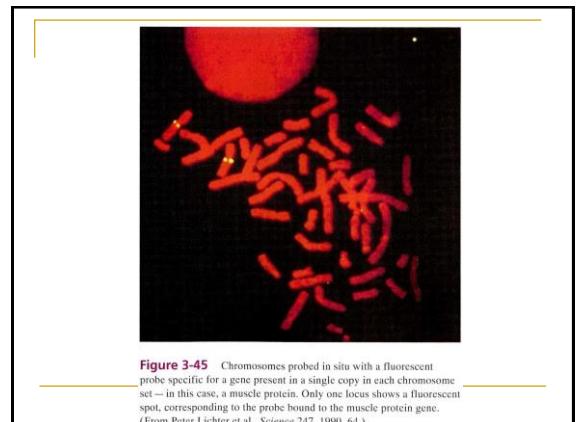
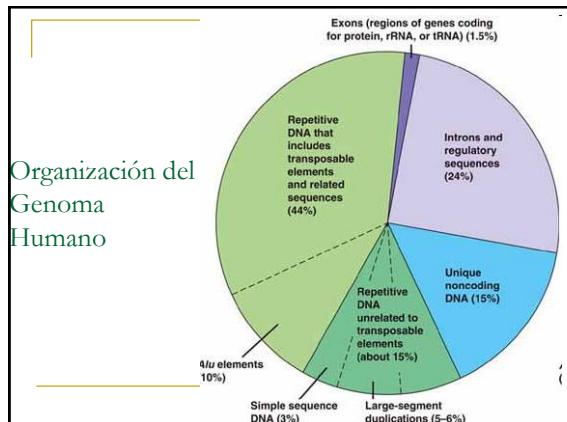
- Más de 10 años después.....

¿Qué hemos aprendido?

Proyecto Genoma Humano

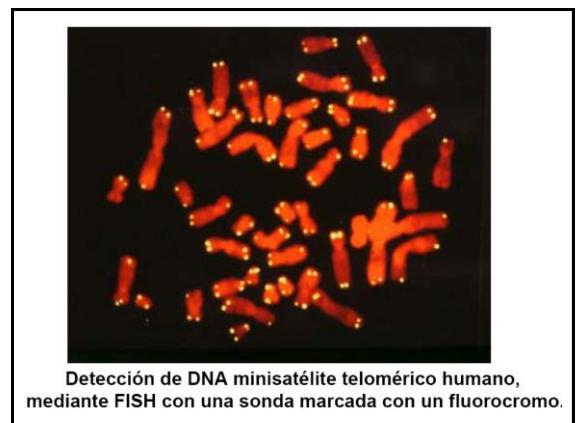
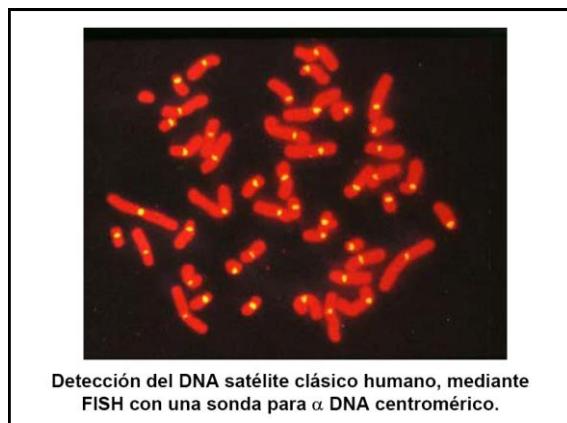
- Genoma Humano: 3.200 Mb de DNA
 - 2.950Mb euromatina
 - 250Mb heterocromatina
- 20.000-25.000 genes codificantes de proteínas → aprox. 25% del genoma.





DNA repetido en tandem

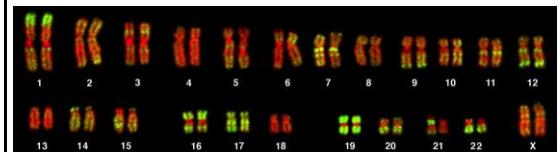
	Total en genoma	Tamaño unidad	Total repeticiones	Ubicación
Satélite	250Mb	5-220nt	100-5.000kb	
Ej. Satélite α		171nt		centrómero
Minisatélite	30.000			
Telomérico		6nt (TTAGGG) _n	5-20kb	Telómeros
Hipervariable (VNTR)		15-100	1-5kb	Regiones subteloméricas
Microsatélite (STR)	200.000	2-4nt	150pb	Distribución homogénea



DNA REPETIDO DISPERSO : PRINCIPALES FAMILIAS

Tipos DNA Repetido	SINES	LINES
Familia	Alu	Line-1
Longitud fragmento de repetición	250 pb	6.000 pb
Grado de repetición	60.000 x – 100.000 x	60.000 x – 100.000 x
Composición nucleotídica principal	G - C	A - T
Localización cromosómica *	Bandas G ⁻	Bandas G ⁺

* Corresponde al 13% - 18% de una banda (1 banda promedio = 6 Mb de DNA en una metafase mitótica que tiene \pm 550 bandas)



Original figure legend: Karyotype from a female human lymphocyte (46, XX). Chromosomes were hybridized with a probe for Alu sequences (green) and counterstained with TOPRO-3 (red). Alu sequences were used as a marker for chromosomes and chromosome bands rich in genes.

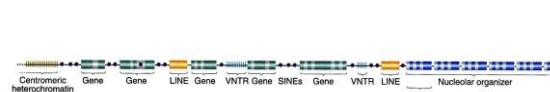
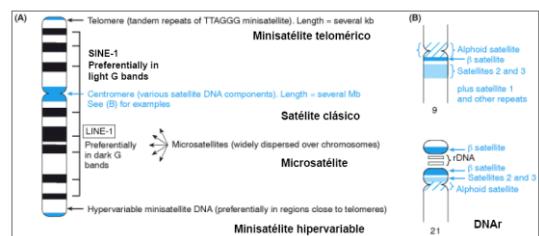


Figure 3-50 General depiction of a eukaryotic chromosomal landscape. This small region of a chromosome happens to have five protein-coding genes, one end of a nucleolar organizer, and one end of centromeric heterochromatin. Various kinds of repetitive DNAs are shown. (Each chromosome would normally have several thousand genes.)



Localización cromosómica de los distintos tipos de DNA repetido.

