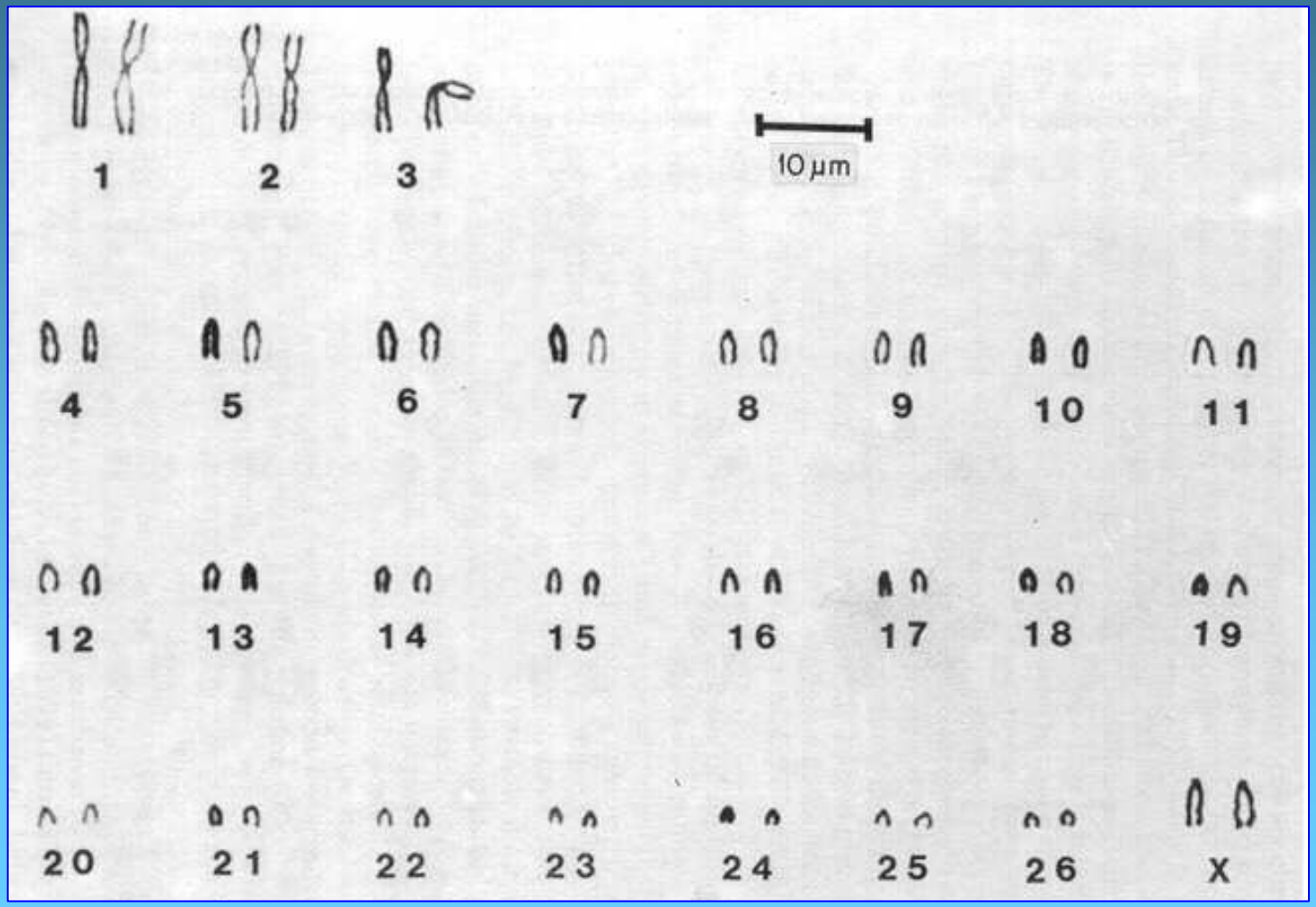
CITOGENETICA III

PATOLOGÍAS CROMOSÓMICAS EN ANIMALES DOMÉSTICOS

Citogenética en Ovinos

CARNERO CRIOLLO (Ovis aries)
2n=54

Cariotipo normal del ovino
2n= 54



ALTERACIONES CROMOSOMICAS EN OVINOS:

Translocaciones Robertsonianas: t1 5/26 Bruere et al. 1976
t2 8/11 " " " "
t3 7/25 " " " "
Comb. t1 y t2 " " " 1981
(No afectan fertilidad)

Quimerismos: 54,XX/XY Wilkes et al. 1978 (Freemartin)

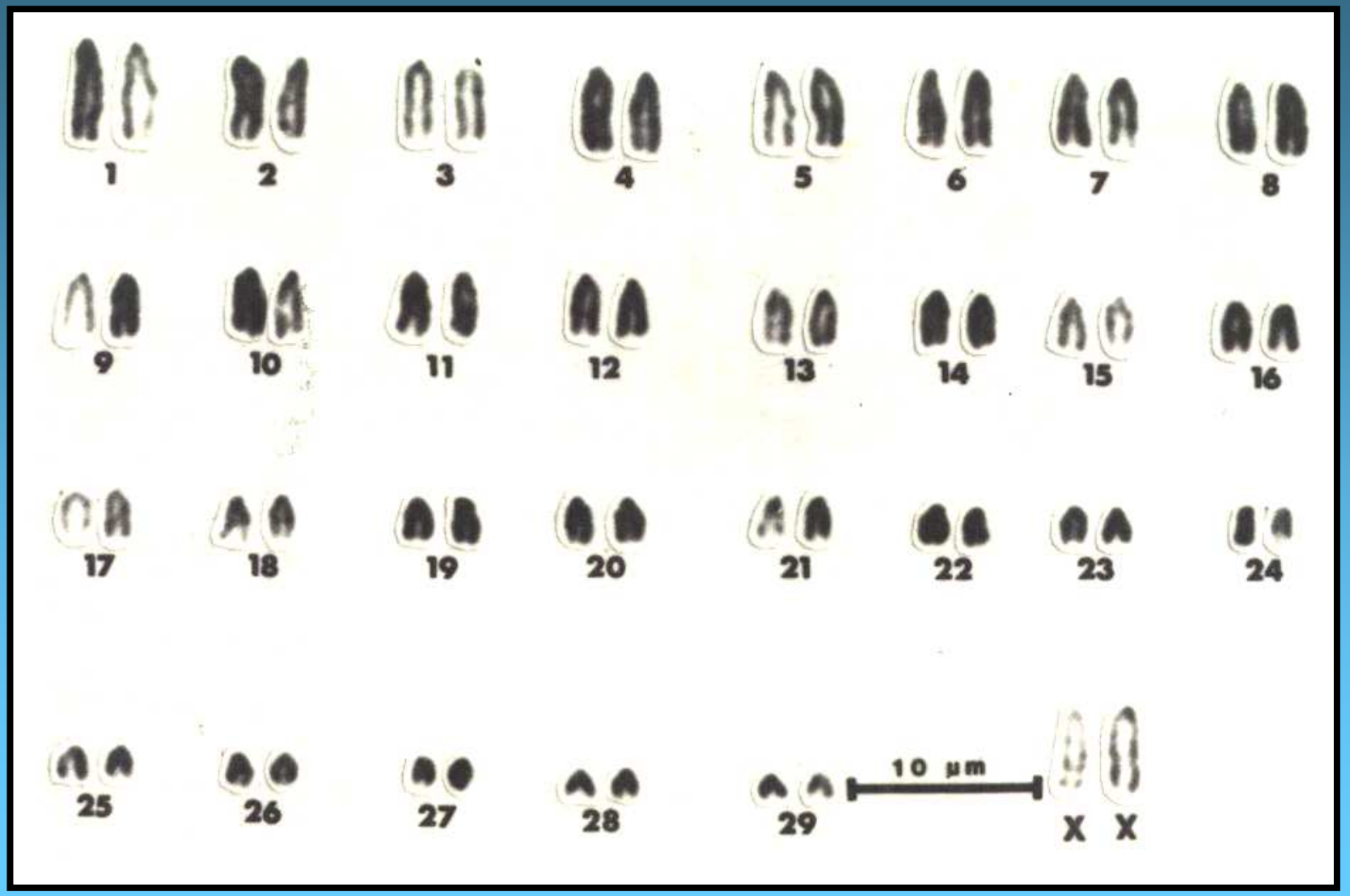
Translocaciones reciprocas: 54,XY t(1p-;24q+) Glhan-Luft et al. 1977
54,XY t(1p-;20q+) " " " " 1980
(Disminuye muerte fetal)

Mosaicismos: 54,XX/55,XYY Moraes et al. 1980
(Disminuye fertilidad)

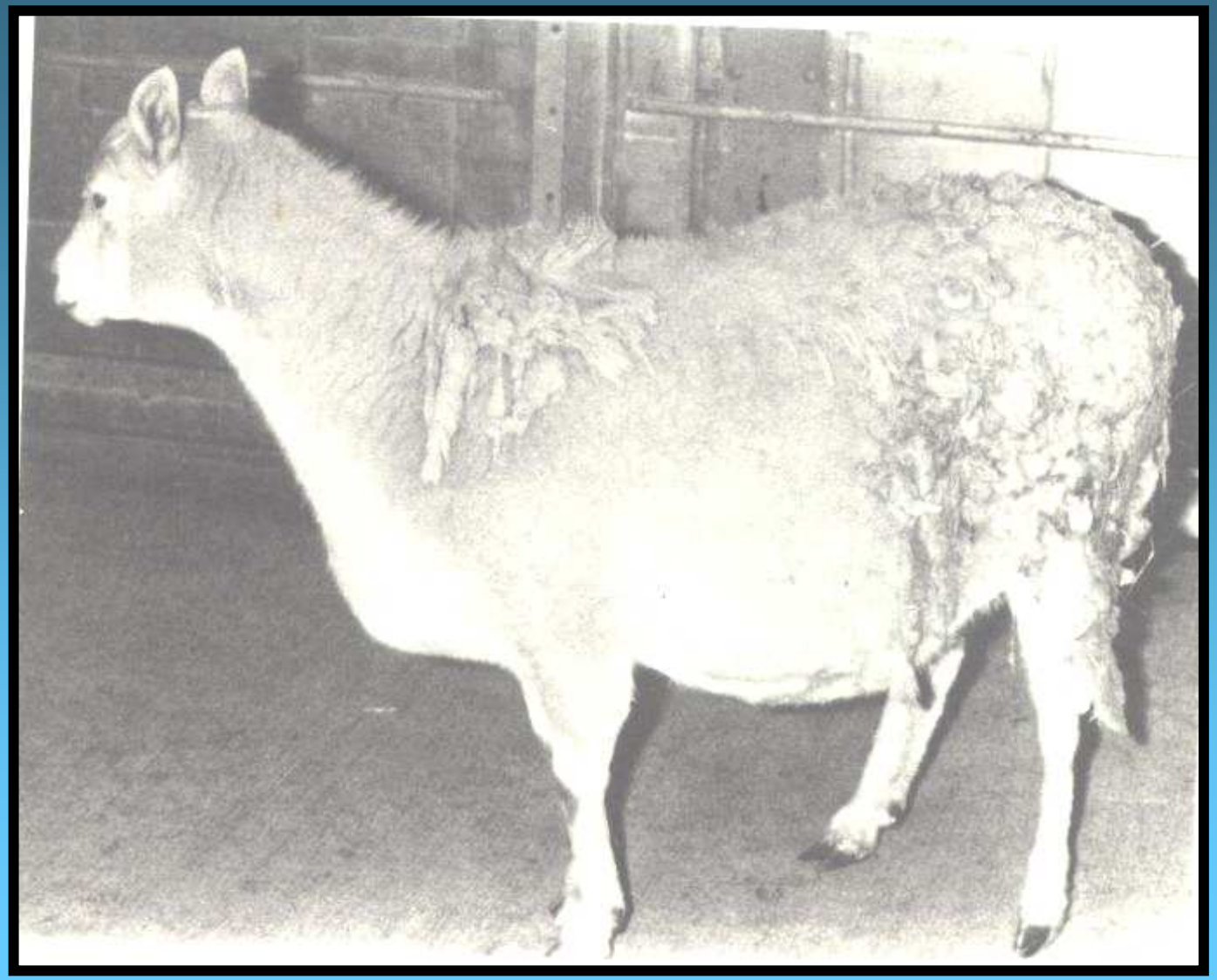
Aneuploidias: 55,XXY Bruere & Kilgour 1974
(Hipoplasia testicular)

CABRA *(Capra hircus)*
2n=60

CARIOTIPO DE CABRA
2n=60

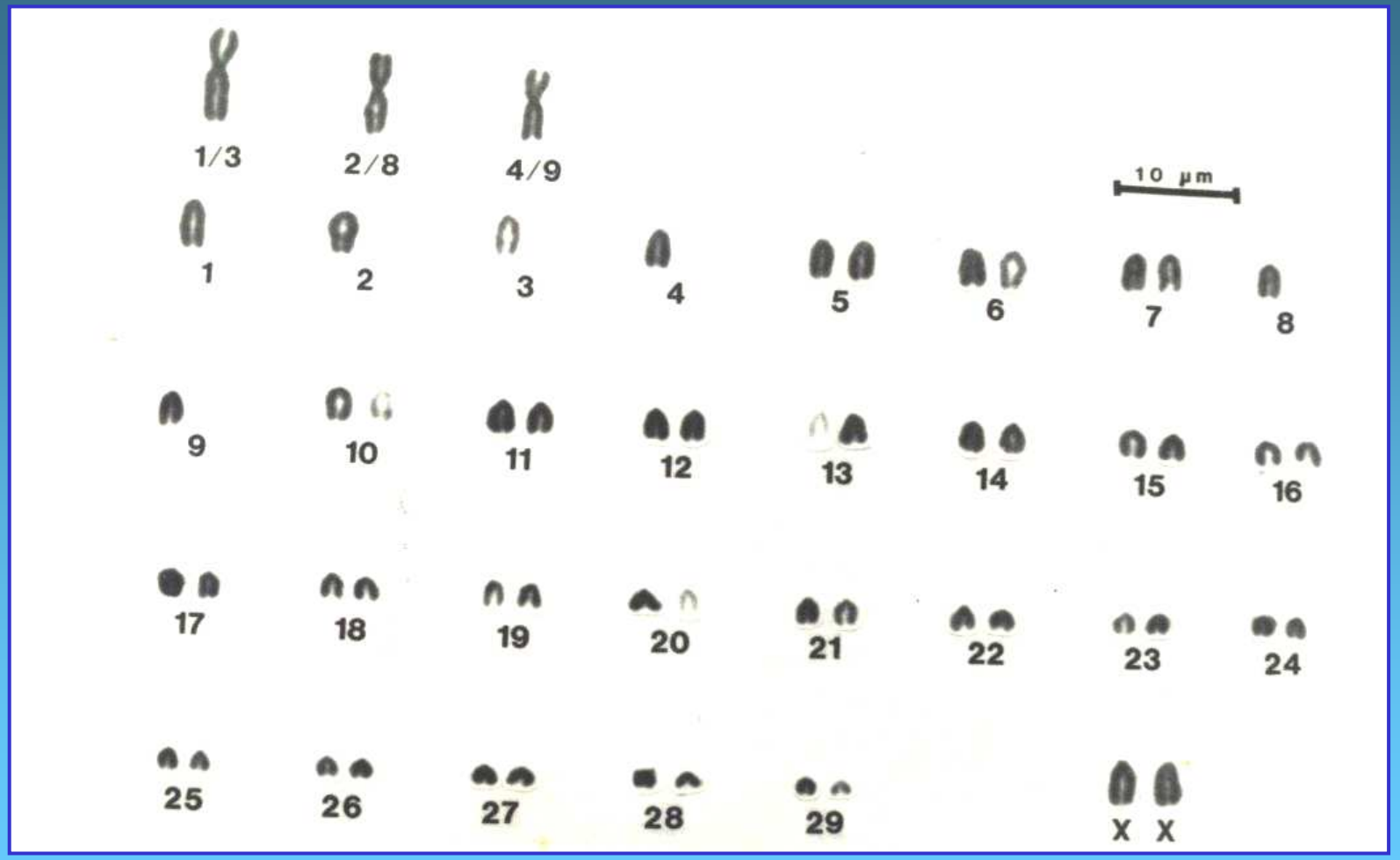


HIBRIDO CABRA x OVEJA



HIBRIDO CABRA x OVEJA

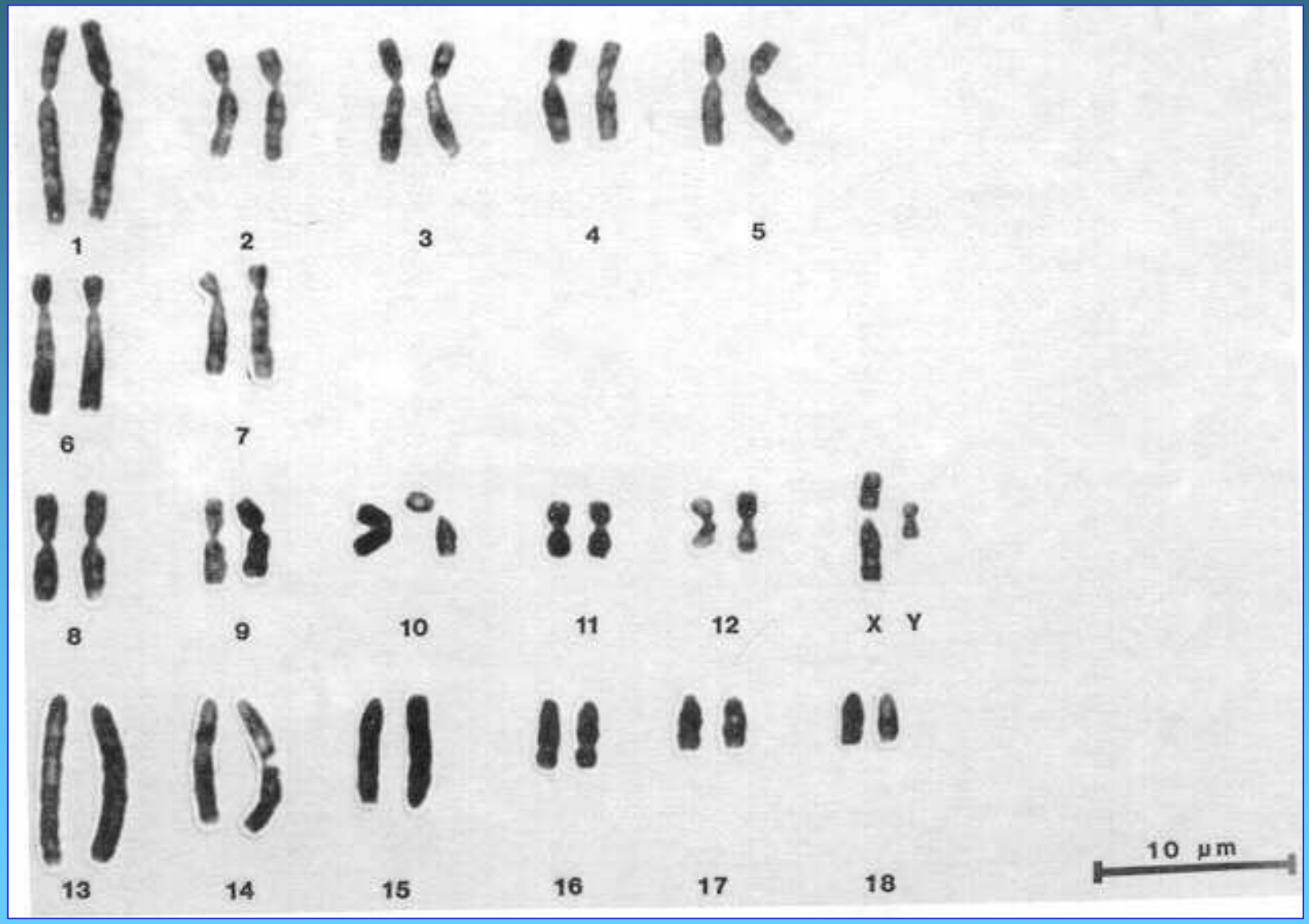
2n=57 (Infértil)



Citogenética en Cerdos

CERDO DOMÉSTICO (Sus scrofa)
2n=38

Cariotipo normal de *Sus scrofa* 2n=38



INTERSEXOS EN CERDOS

nº de animales	constitución cromosómica	Referencias
2	38,XX	Basrur & Kanagawa (1971)
1	38,XX/38,XY; 80%XY	
1	39,XXY	Breeuwsma (1968)
1	38,XX/38,XY; 91%XY	Bruere y cols. (1968)
7	Cromatina sexual (hembras)	Cantwell y cols. (1958)
1	38,XX	Hard & Eisen (1965)
4	38,XY	Lojda (1975)
7	38,XX/38,XY	
1	38,XX	
1	38,XX/38,XY/37,X0	
15	sin citología	
1	t rcp(6p+;14q-)	Madan y cols. (1978)
1	38,XX	Makino y cols, (1962)
1	37,XX + rob(13/17)	Masuda y cols. (1975)
1	38,XX/38,XY; 90%XX	Mc. Fee y cols. (1966)
2	38XX	Mc.Feely y cols. (1967)
7	38,XX	Melander y cols. (1971)
8	38,XX	Miyake (1973)
12	38,XX	Okamoto & Masuda (1977)
1	38,XX	Vogt (1966)

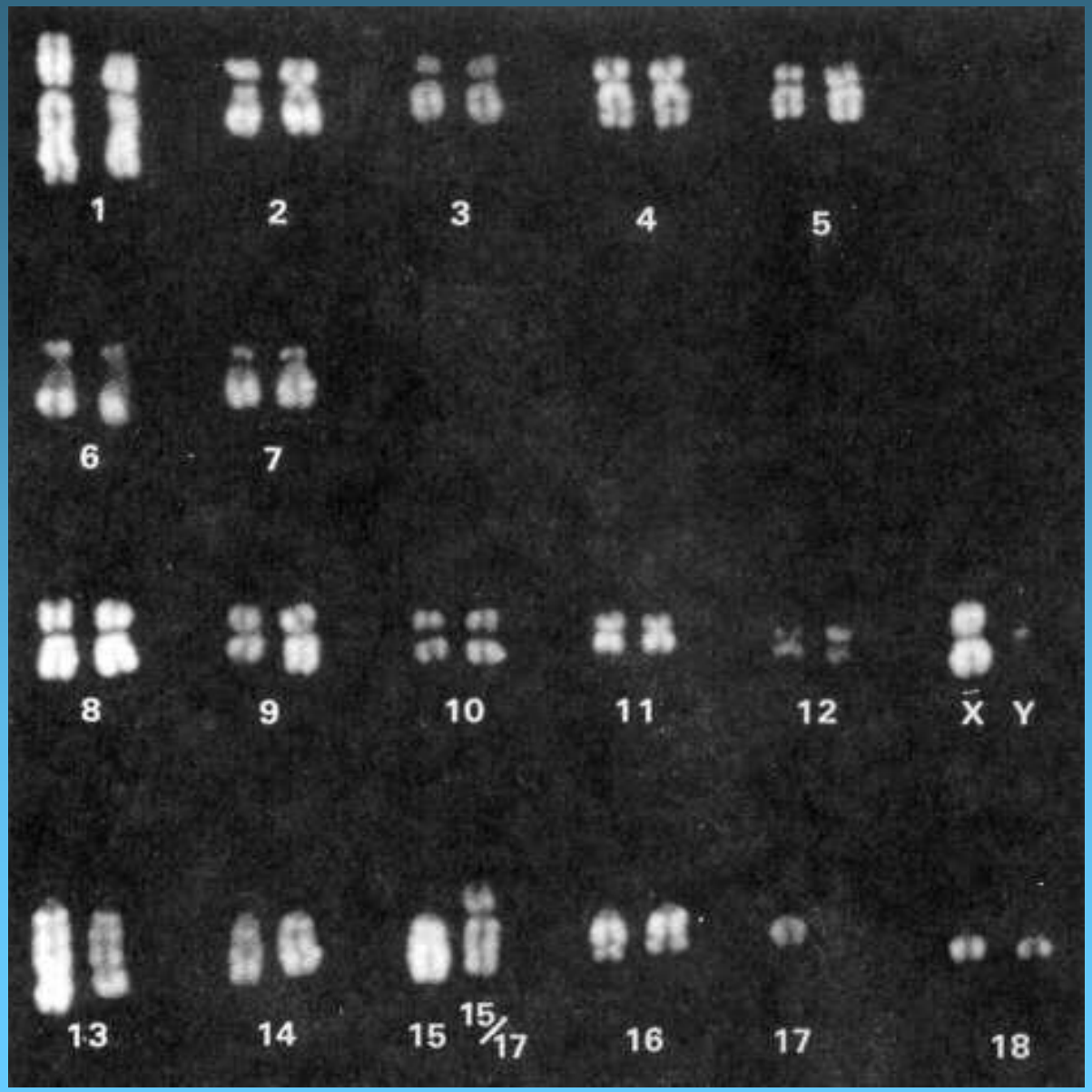
Traslocaciones en cerdos

TABLE 13.2. Naturally Occurring Autosomal Aberrations in Swine

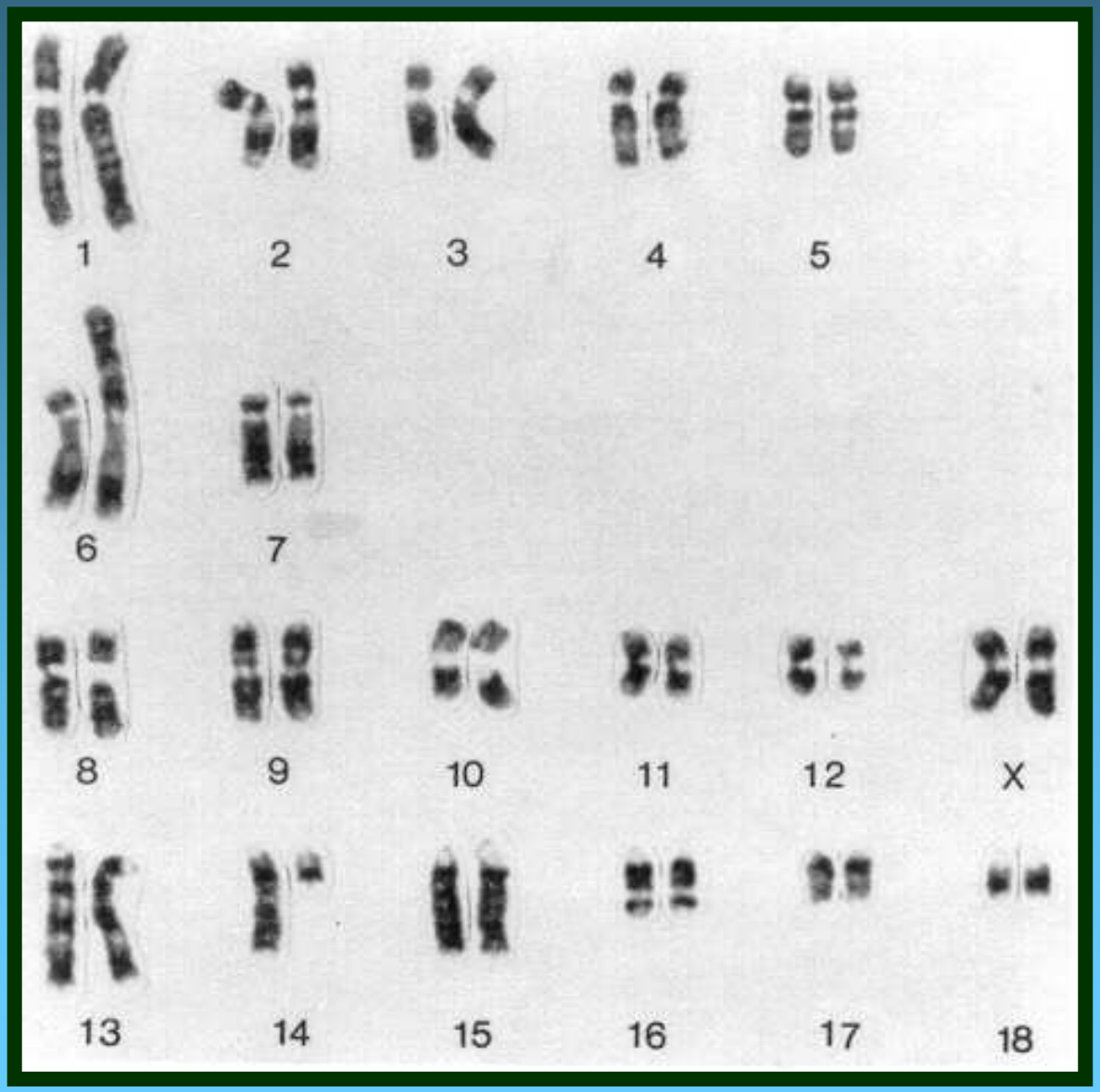
Description of aberration[a]	Other information	Reference
t rcp(1p−;6q+)	Reduced litter size	Locniskar *et al.* (1976)
t rcp(1p−;16p+)		Forster *et al.* (1981)
t rcp(1p+;14q−)	Reduced litter size	Gustavsson and Settergren (1983)
t rcp(1q−;17q+)	Reduced litter size	Gustavsson and Settergren (1983)
t rcp(1p−;8q+)	Reduced litter size	Gustavsson and Settergren (1983)
t rcp(4q+;14q−)	Reduced litter size	Popescu and Legault (1979)
t rcp(6p+;14q−)	Intersex	Madan *et al.* (1978)
t rcp(6p+;15q−)		Bouters *et al.* (1974)
t rcp(7q−;11q+)	Reduced litter size	Gustavsson and Settergren (1983)
t rcp(7q−;15q+)	Reduced litter size	Popescu (1983)
t rcp(9p+;11q−)	Reduced litter size	Gustavsson and Settergren (1983)
t rcp(11p+;15q−)		Hageltorn *et al.* (1973) Henricson and Backstrom (1964)
t rcp(13q−;14q+)	Reduced litter size	Hageltorn (1976)
rob(13/17)	Normal phenotype	Miyake *et al.* (1977)
rob(13/17)	(2) Intersex	Masuda *et al.* (1975)

[a] The numbers are not strictly comparable because different standard karyotype references were used by some.

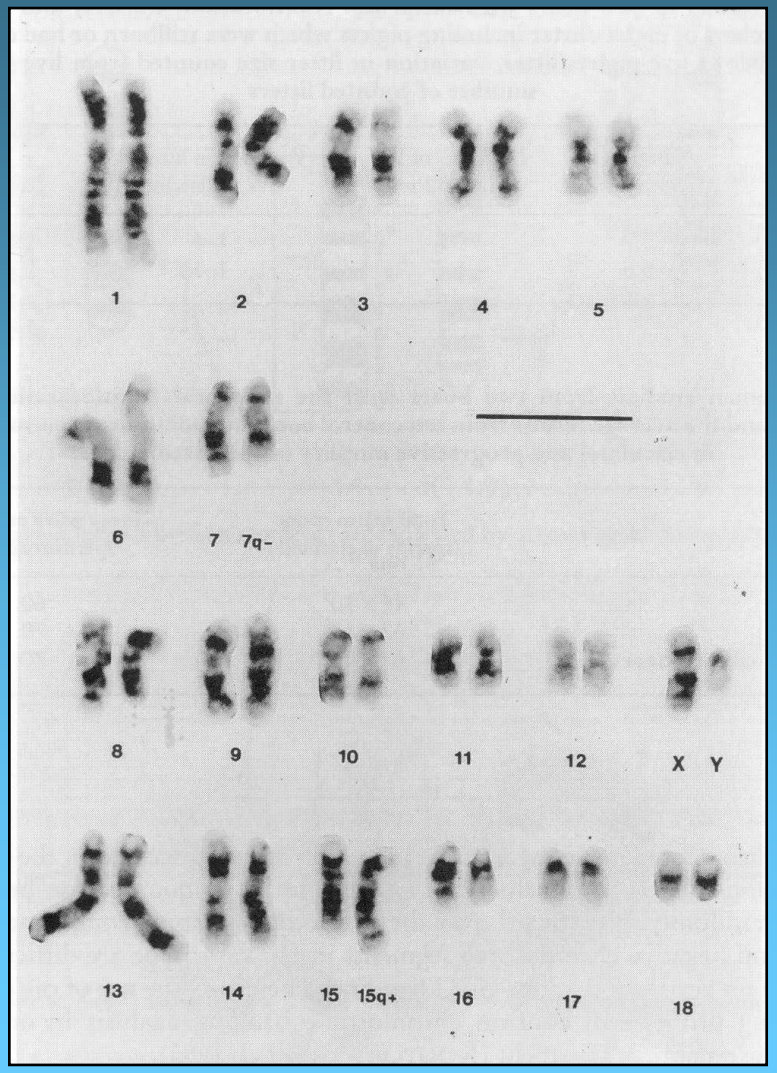
Traslocación Robertsoniana Rob.15/17

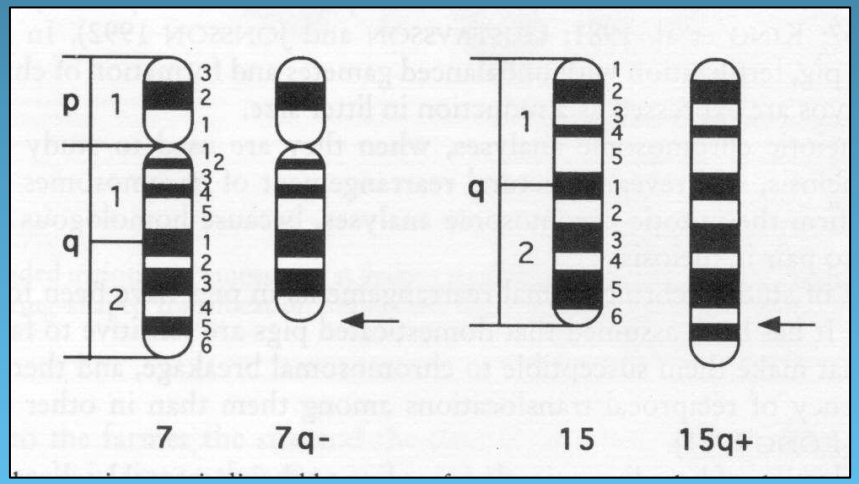


Translocación Recíproca: t rcp(6p+; 14q-)

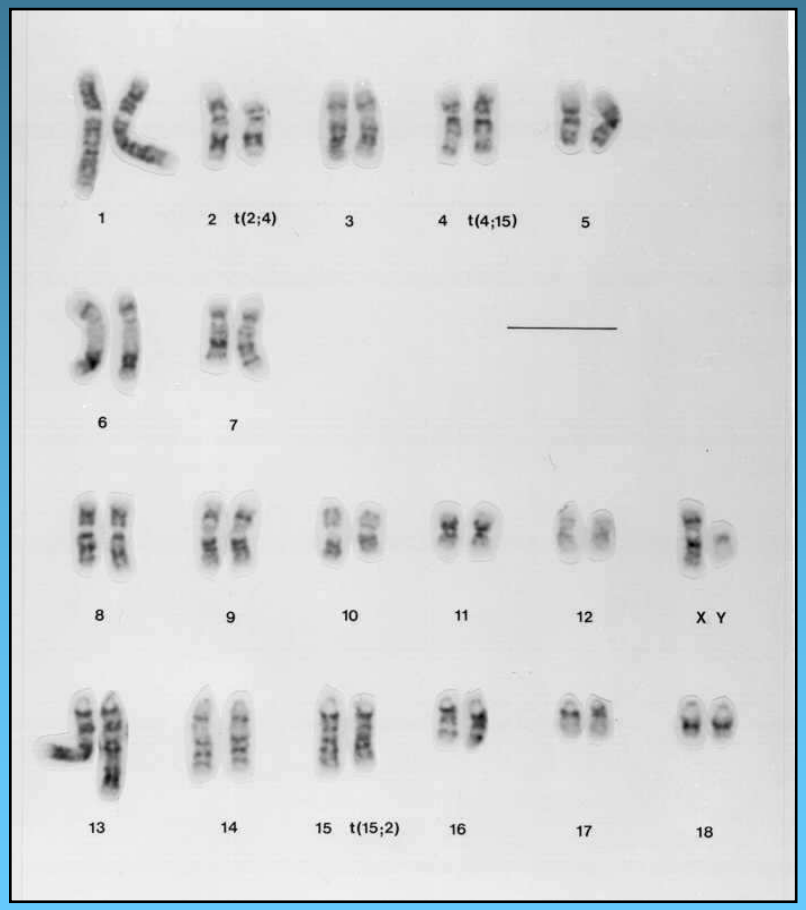


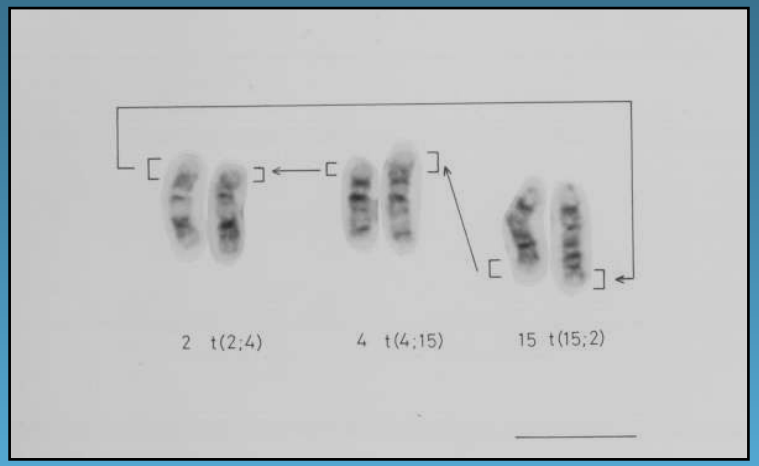
Translocación Recíproca: t rcp(15q+;7q-)

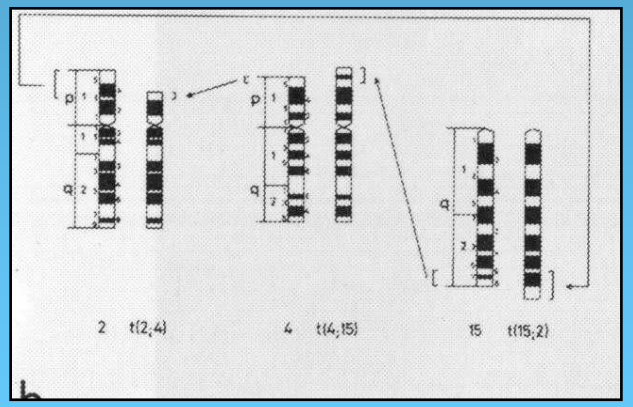




Translocación Recíproca:t rcp(2;4) (4;15) (15;2)

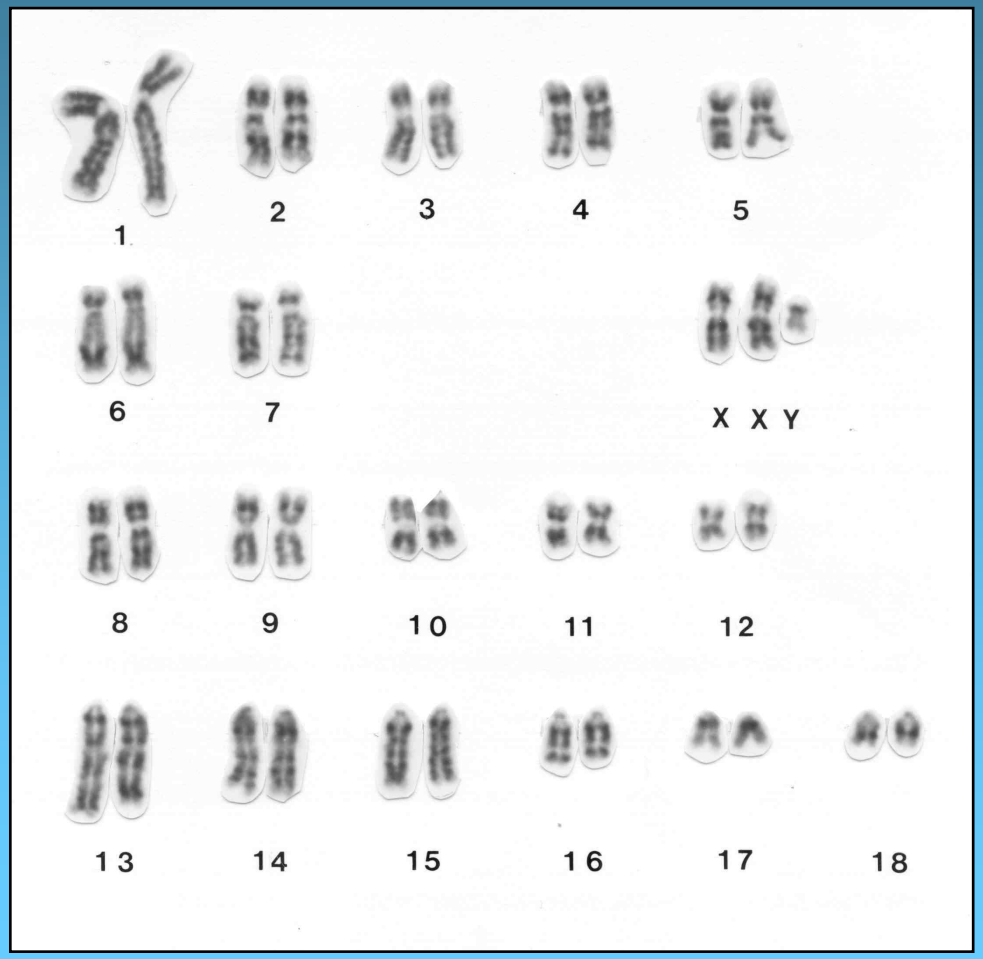


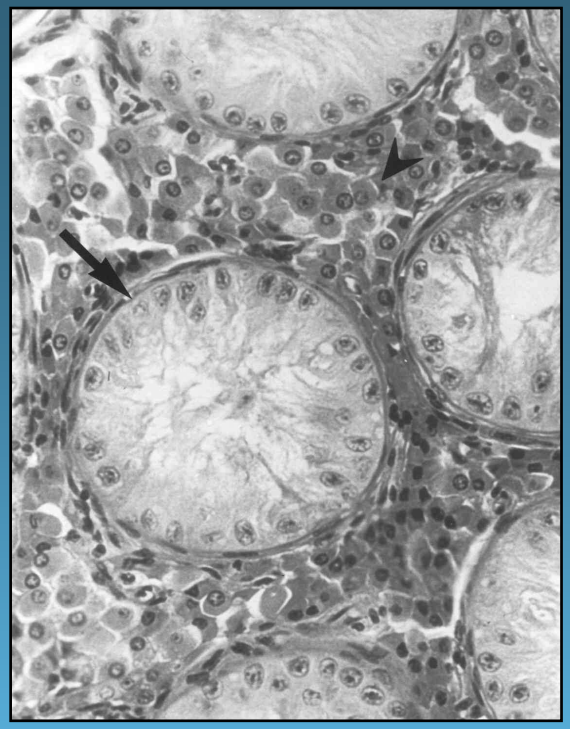


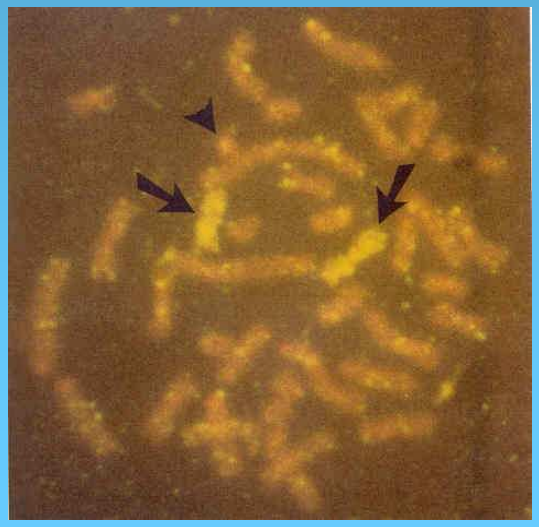


ANEUPLOIDIA DE LOS SEXUALES

Cerdo XXY 2n=39



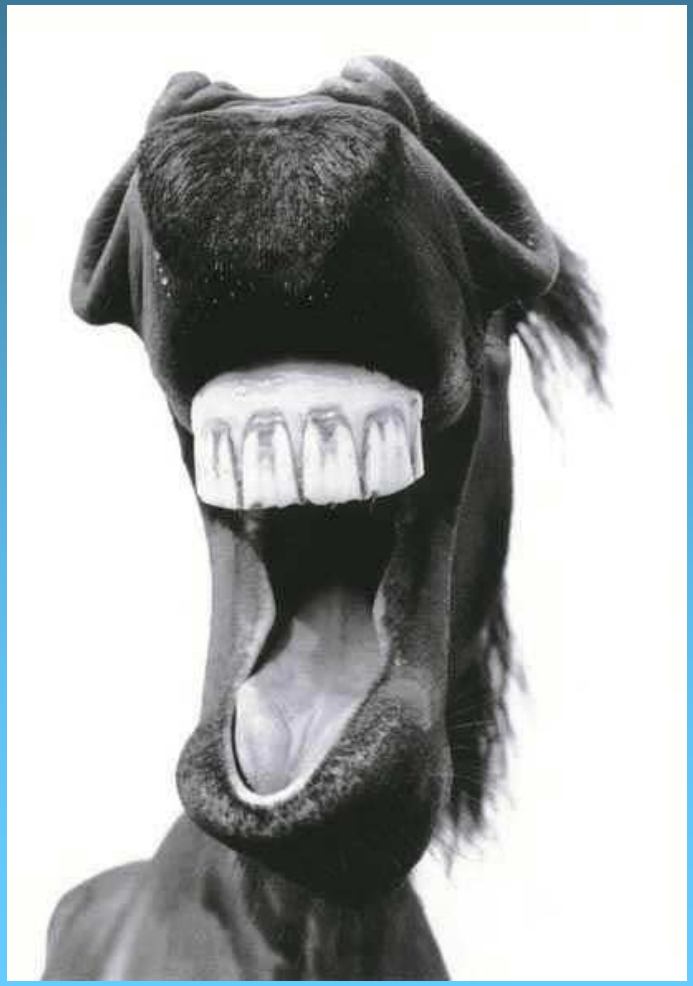




Citogenética en équidos

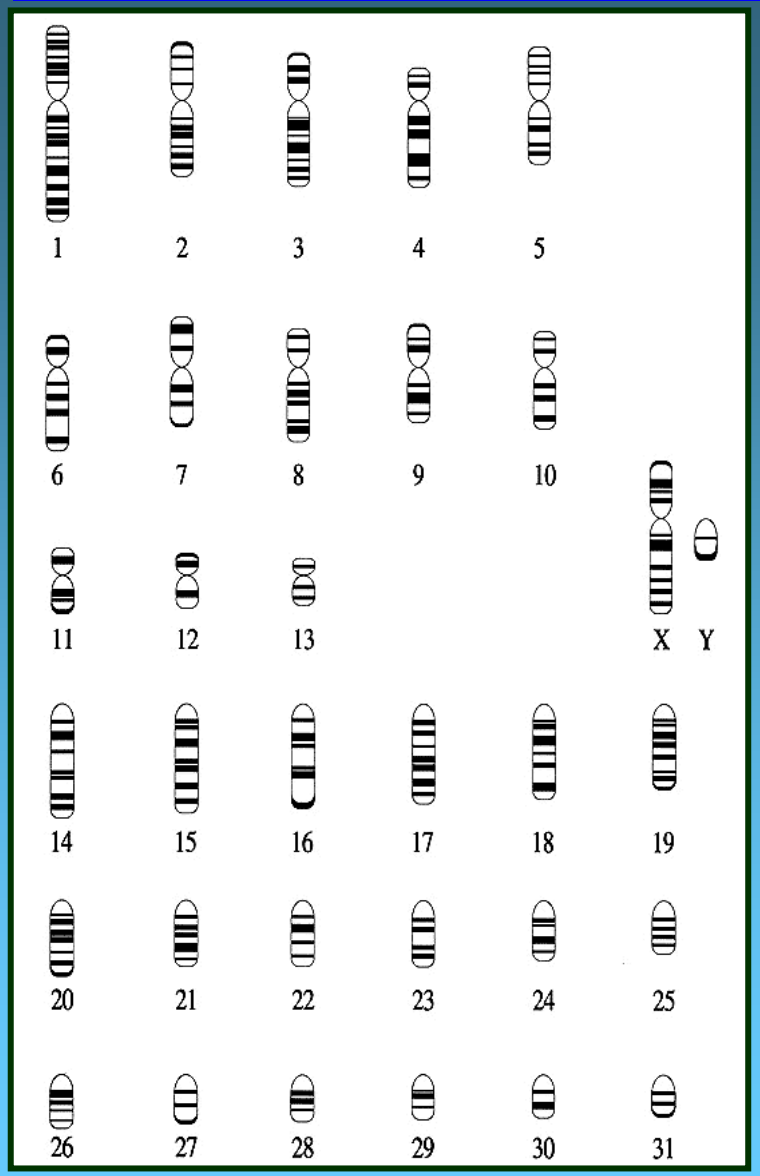
Equus caballus

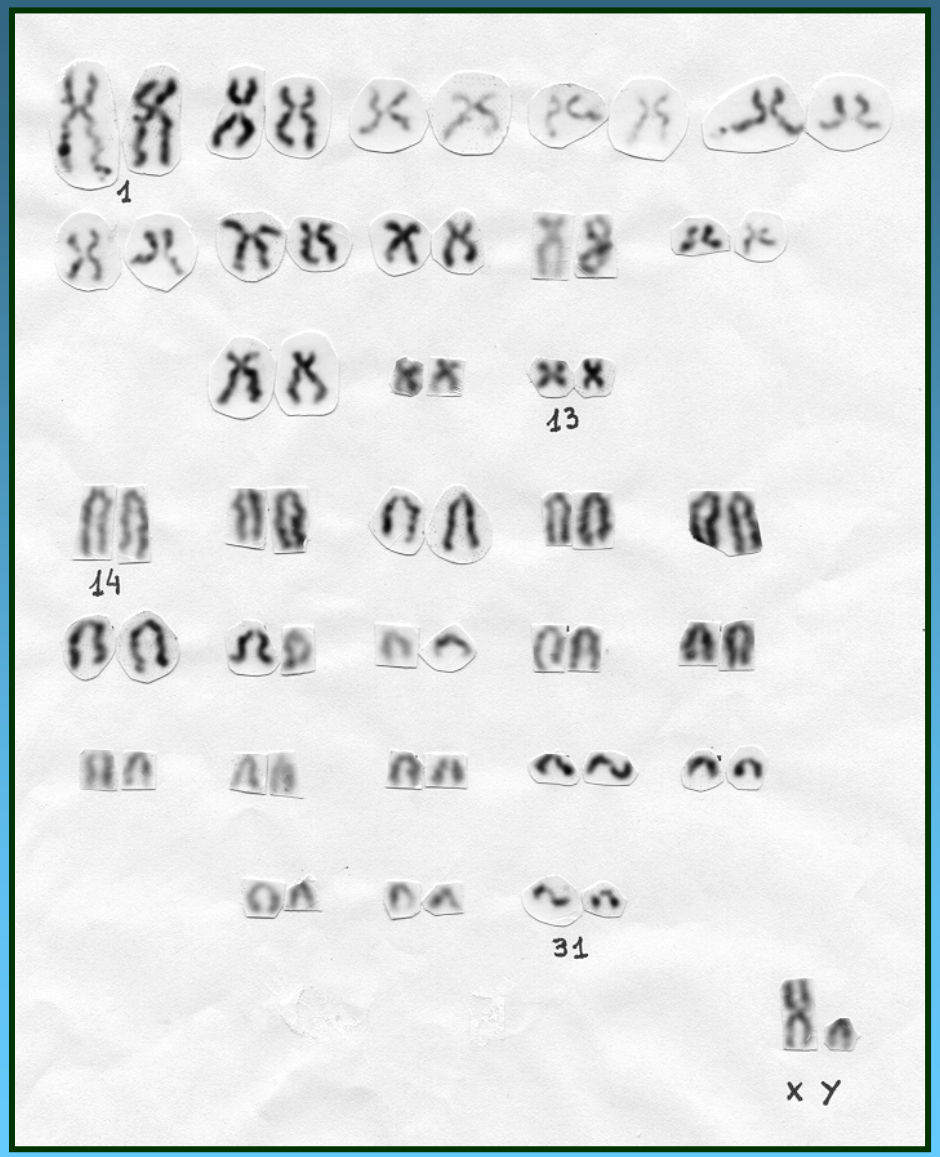
(caballo doméstico)
2n=64



Híbridos cebra/ caballo, cebra/burro, caballo/burro (todos infértiles)

Idiograma y cariotipo de *Equus caballus* macho





El 90% de las aberraciones cromosómicas en equinos involucran a los cromosomas sexuales

PATOLOGIA	CROMOSOMAS SEXUALES
Hipoplasia ovárica	XXY/XY X0 X0/XX
Disgenesia gonadal	X0/XX X0 X0/XY XX/X0/XY
Hipoplasia testicular	XXY
Criptorquidia	XXY/XY/XX/X0
Intersexualidad	XX/XY XX XXXY XX/XXY XY X0/XXY

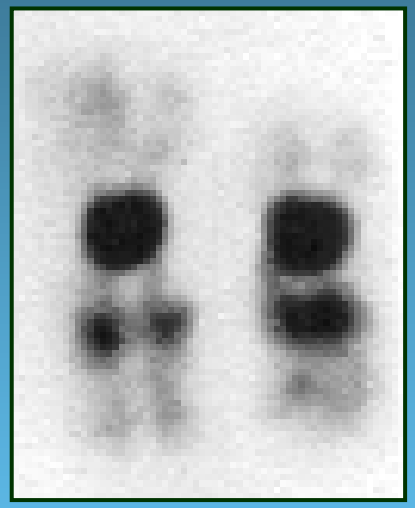
Otras alteraciones: Trisomías de los cromosomas autosómicos 23, 26, 28, 30 y 31

Por qué realizar estudios citogenéticos en equinos con problemas reproductivos?

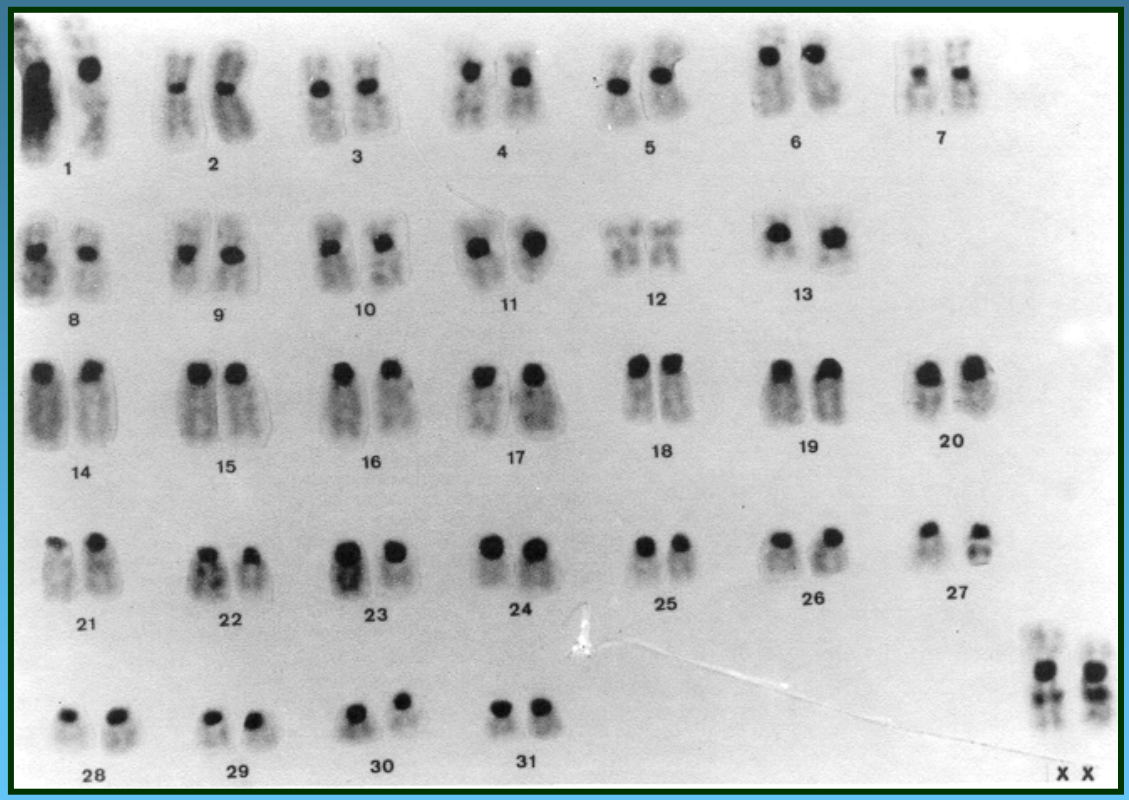
- Todas las alteraciones cromosómicas están relacionadas con problemas reproductivos.

- La detección temprana de animales con aberraciones cromosómicas ahorra tiempo y dinero a los productores.

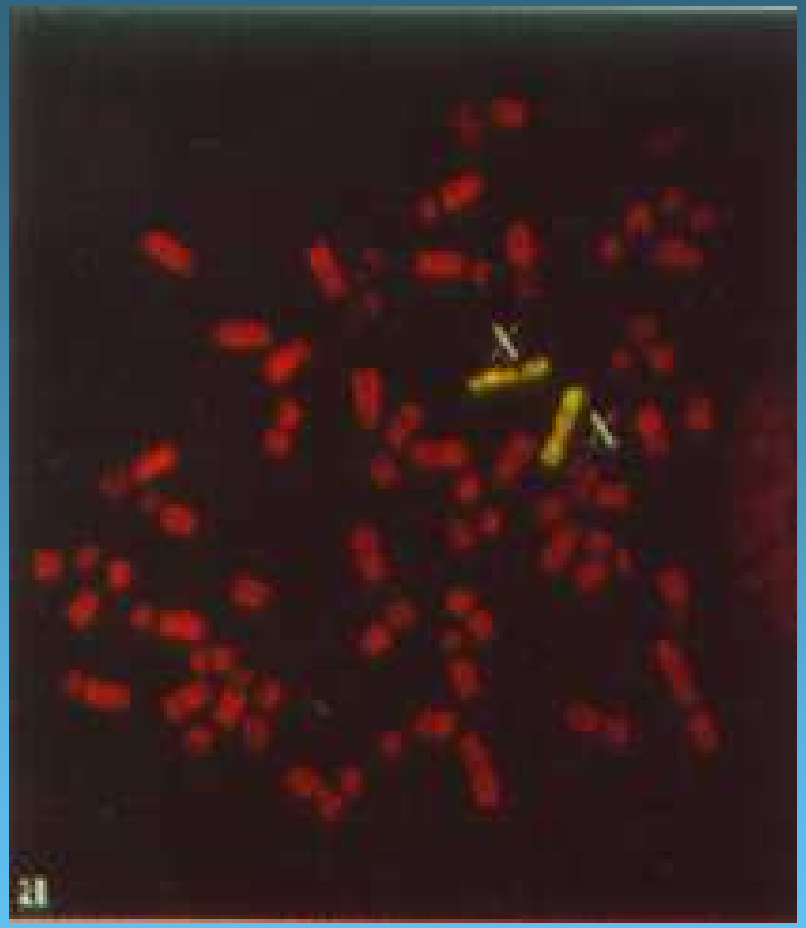
Identificación de los cromosomas sexuales por banda C



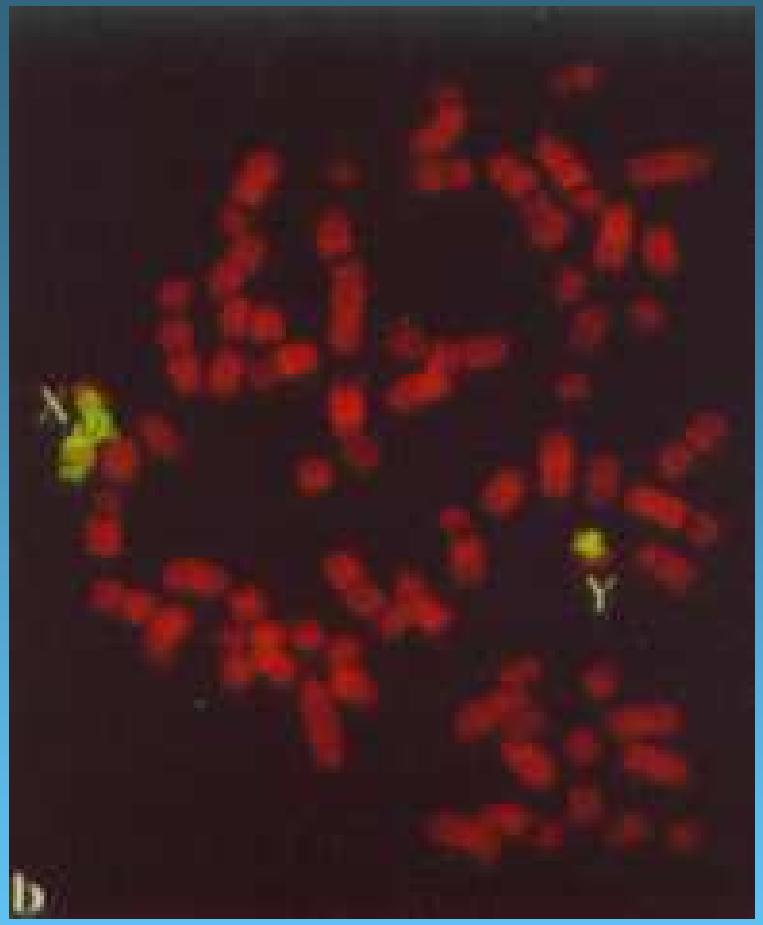
Cromosomas X bandeados



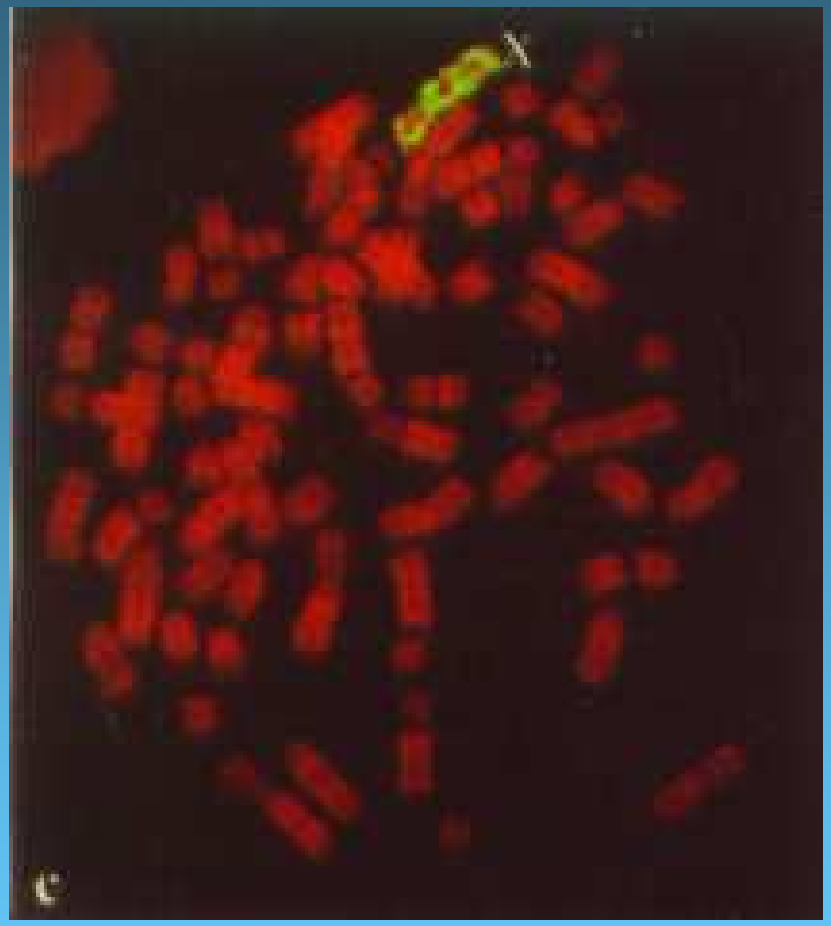
Cariotipo Banda C



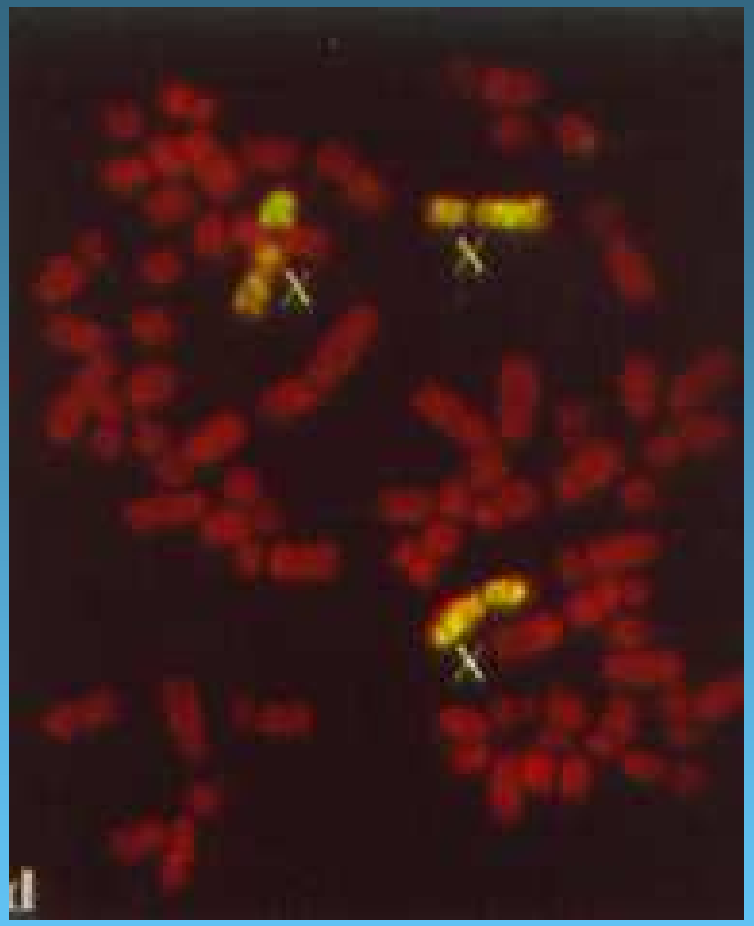
Hembra Normal



Macho Normal



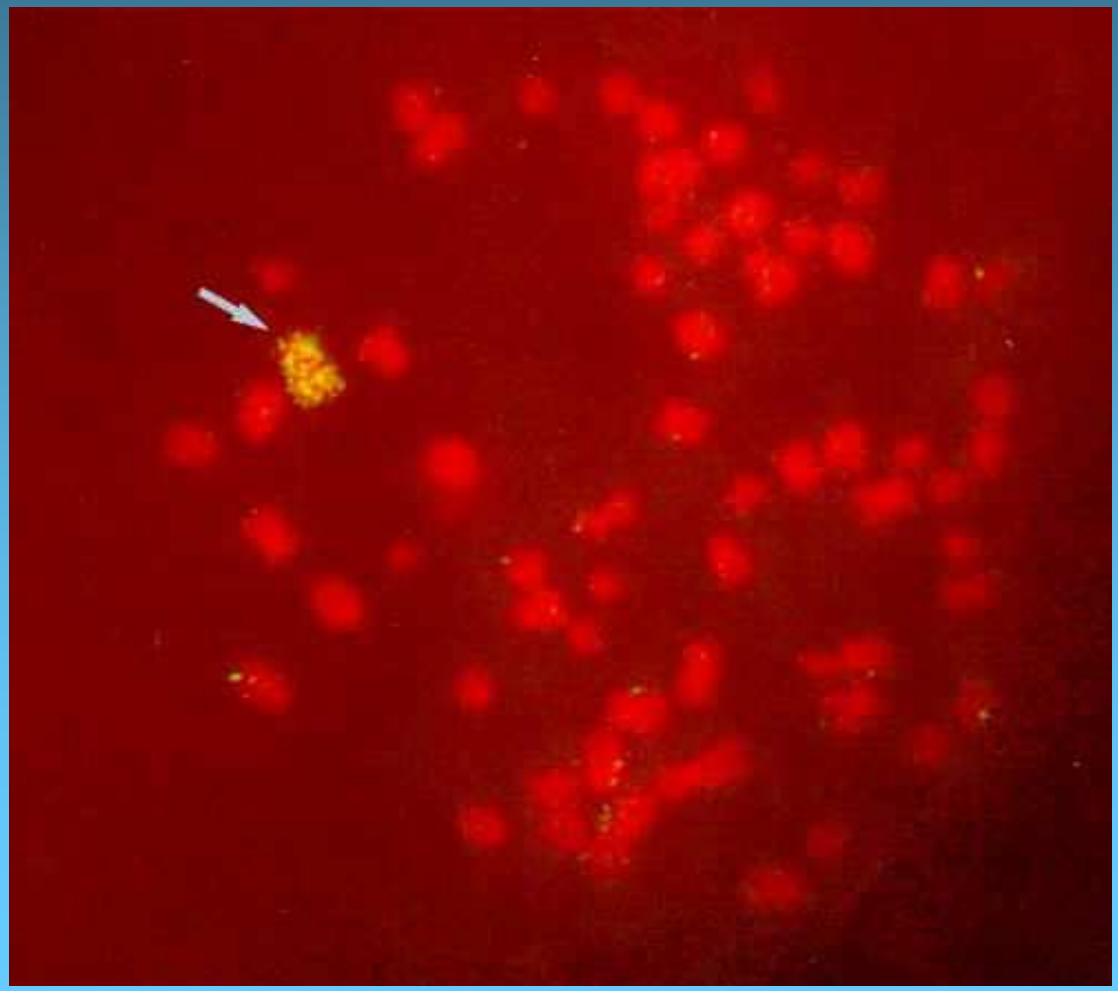
Monosomía del X



Trisomía del X

Yegua 2n = 63,X0

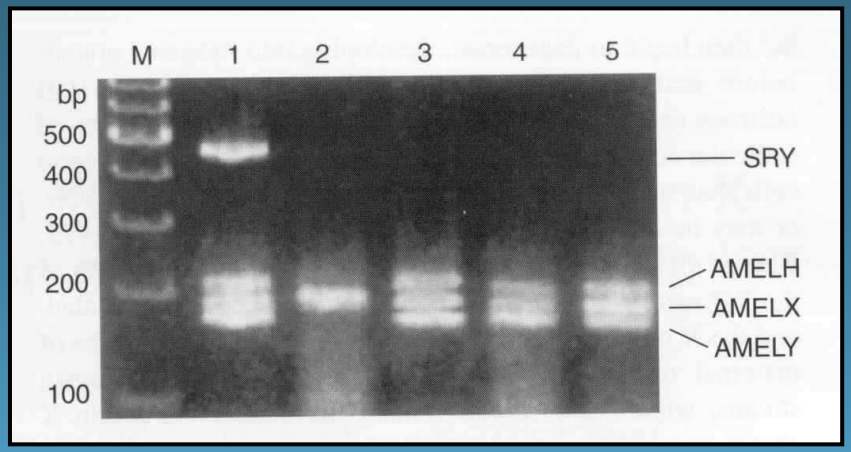
Yegua 2n = 63,X0



Yegua 2n = 63,X0

Yegua 2n= 64XY

Intersexo gonadal

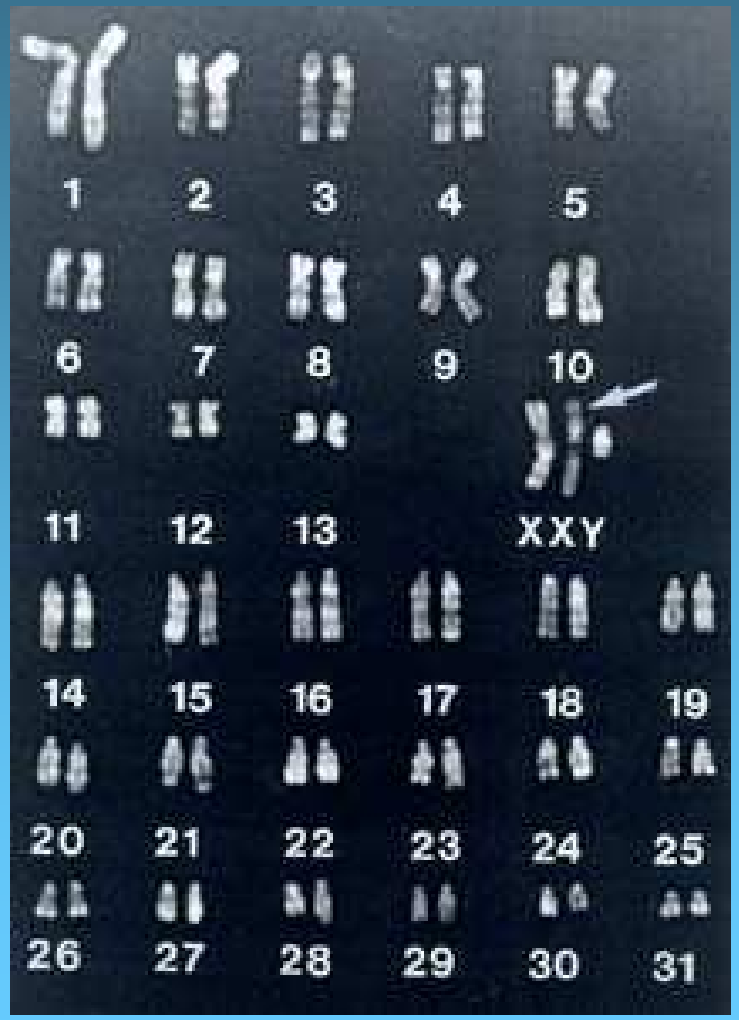


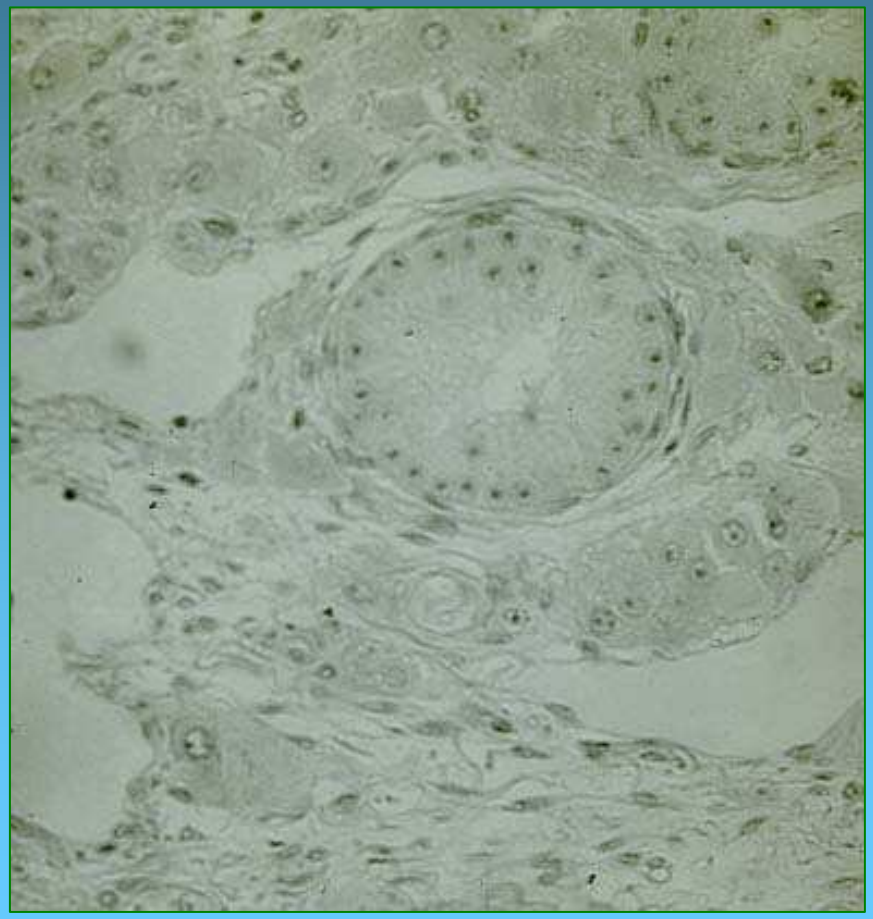
Equino con Hipospadia

(cariotipo 2n = 65, XXY)

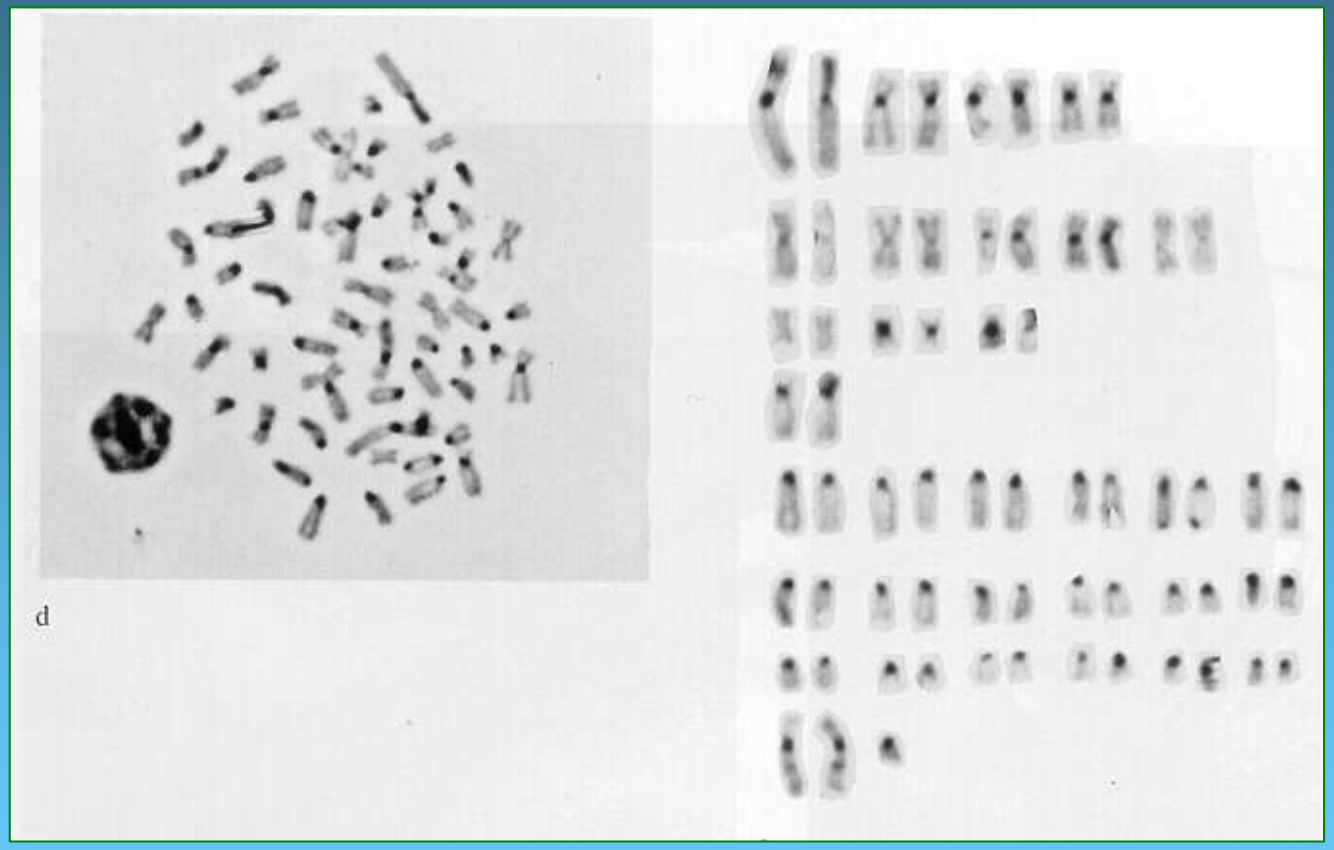
Equino con Hipospadia (cariotipo 2n = 65, XXY)

Cariotipo e histología del animal hipospádico 2n = 65,XXY

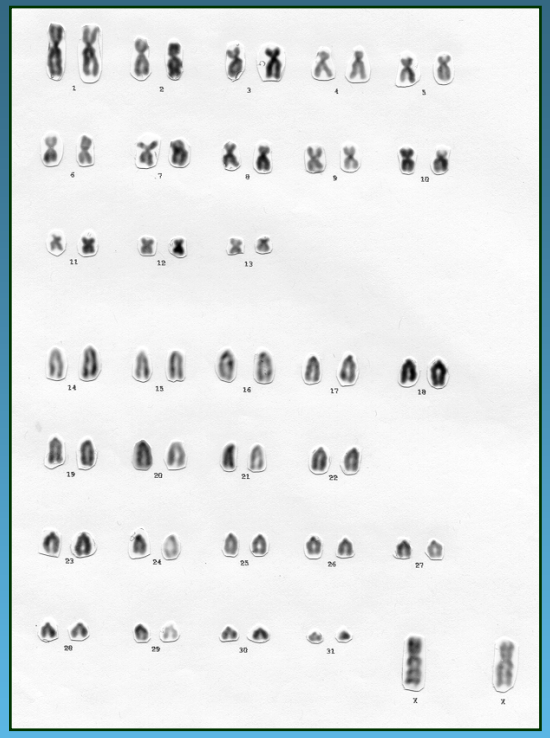




Cariotipo animal hipospádico 2n = 65,XXY banda C



MOSAICOS 2n= 64,XX/63,X0



CASOS DESCRITOS EN URUGUAY

1987 Postiglioni y cols.	PSC	64,XX/63,X0
1988 de Bethencourt y cols.	Hannoveriana	64,XX/63,X0
2000 de Bethencourt y cols.	Criolla	64,XX/63,X0
2002 de Bethencourt y cols.	PSC	64,XX/63,X0

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