



STAGE INVERNALE 2017

MODULO DI ANTROPOLOGIA FORENSE

Responsabile scientifico: Prof.ssa Olga Rickards

Roma, 16 giugno 2016

Giornale del mattino

Un bambino di 10 anni ritrova i resti di un motorino carbonizzato nel napoletano. Giocava a palla con gli amici in un parcheggio e poi la macabra scoperta: i resti del motorino carbonizzato e dei passeggeri, probabilmente due, ancora a bordo del mezzo.

Il tempestivo arrivo delle forze dell'ordine e del PM Dott. Neri Nero ha permesso il recupero dei resti.

Le analisi verranno svolte presso i laboratori di Antropologia Forense dell'Università degli Studi di Roma Tor Vergata.

Il bambino sotto shock è ricoverato all'ospedale Cardarelli di Napoli. Il quartiere resta con il fiato sospeso in attesa di eventuali svolte....



Fotografie
scattate sul
luogo del
ritrovamento

NMI: 3 INDIVIDUI

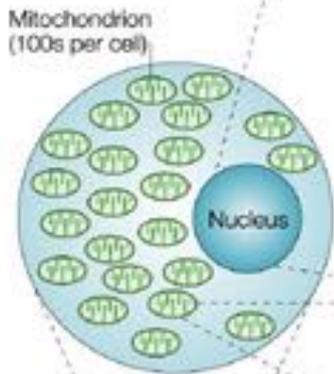
1 individuo di **sexso maschile** di circa **30-35 anni**

1 individuo di **sexso femminile** di **35-40 anni**

1 subadulto di 9-10 anni



ANALISI MOLECOLARI

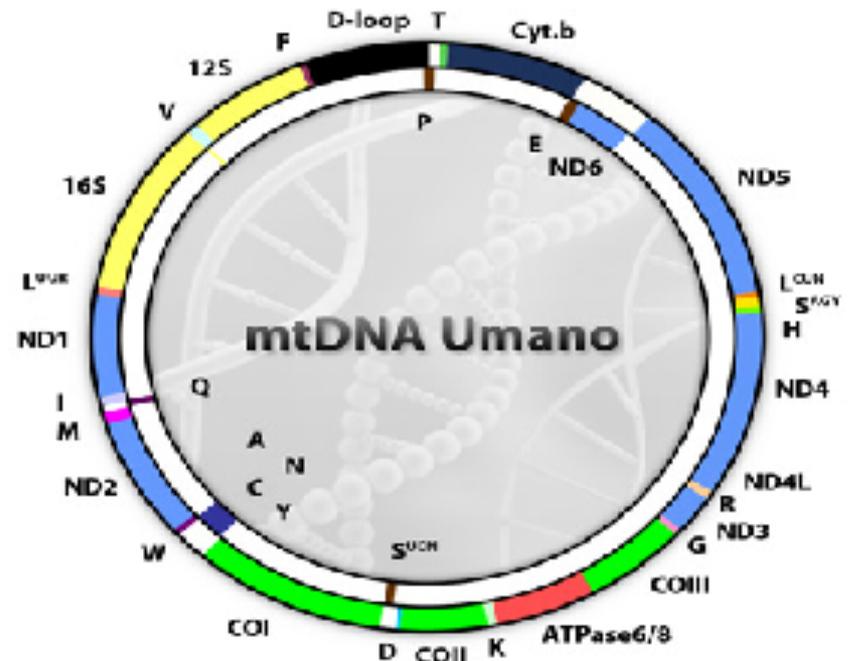


	Marker types	Source of variation	Advantages	Disadvantages
Autosomes 	STRs	Independent chromosomal assortment; recombination; mutation	Extremely high discrimination power	Very degraded DNA difficult to type
	SNPs	Independent chromosomal assortment; recombination; mutation - but low rate	Usable on very degraded DNA	Mostly biallelic, so relatively low discrimination power; mixtures difficult to resolve
Y chromosome (one copy per male cell) 	STRs	Mutation only	Male-specificity; useful in male-female mixtures	Relatively low discrimination power; sharing within patriline; possible population structure problems
	SNPs, usually in control region	Mutation only	High copy number, therefore good survival in old/damaged samples	Heteroplasmy; low discrimination power; sharing within matriline; possible population structure problems



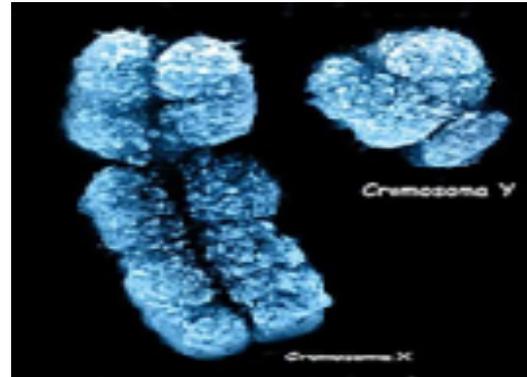
DNA MITOCONDRIALE

- Ereditato esclusivamente per via materna
- presente in elevato numero di copie all'interno della cellula
- elevato tasso di evoluzione



STRs del cromosoma y

- ereditato per via paterna e solo dagli individui di sesso maschile

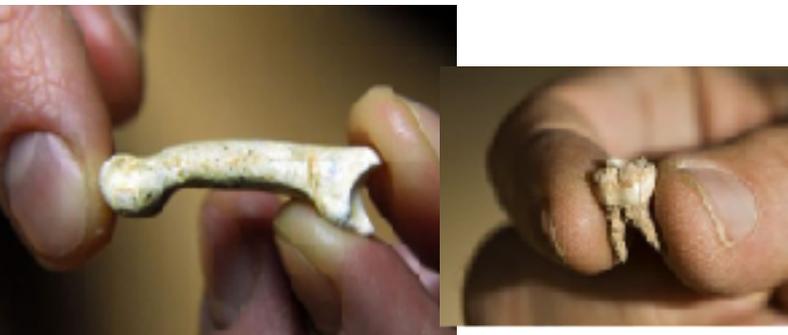


STRs degli autosomi

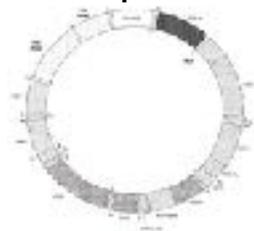
- 50% ereditato dalla madre
- 50% ereditato dal padre



Estrazione del DNA genomico totale

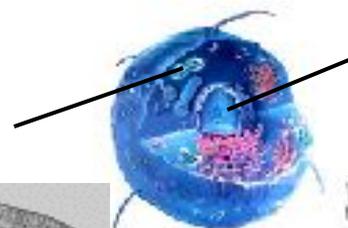


Mitocondri



DNA mitocondriale

Nucleo



cromosomi



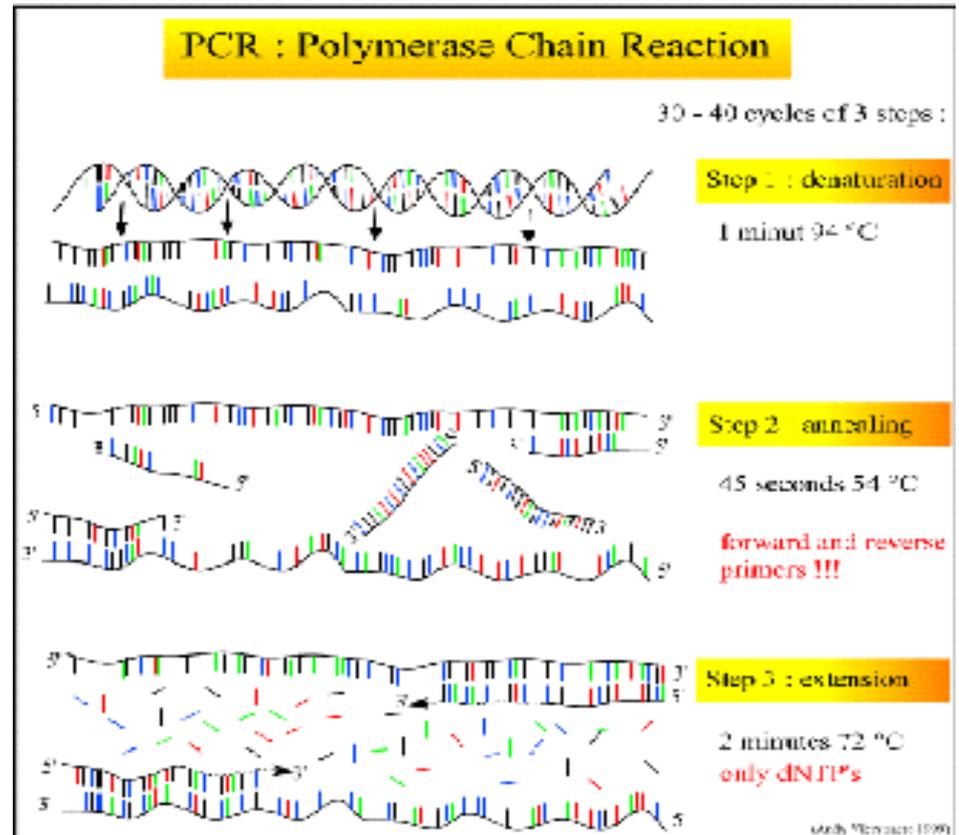
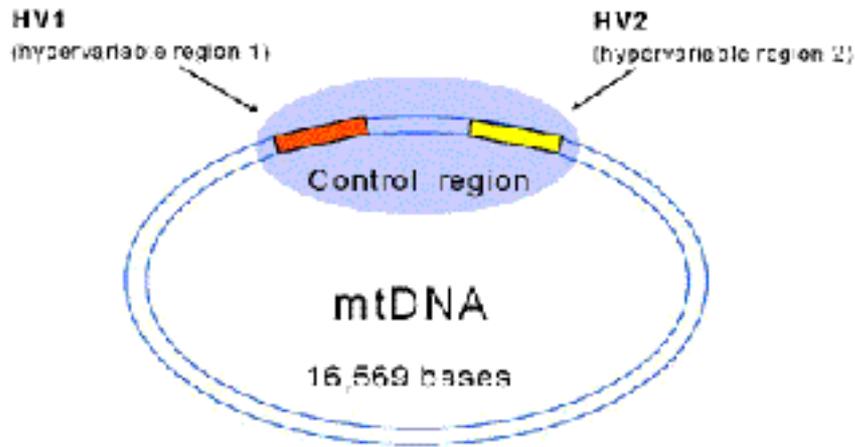
SCELETRO: ZUCCHERO
E ACIDO FOSFORICO

BASE

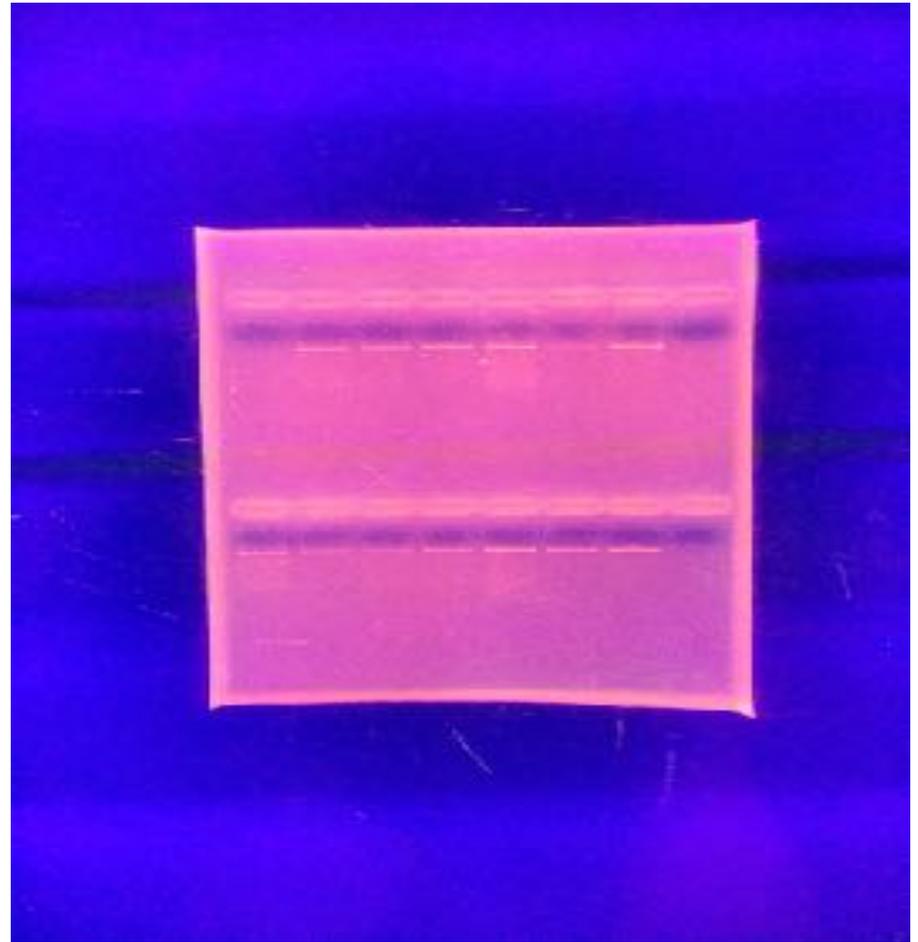
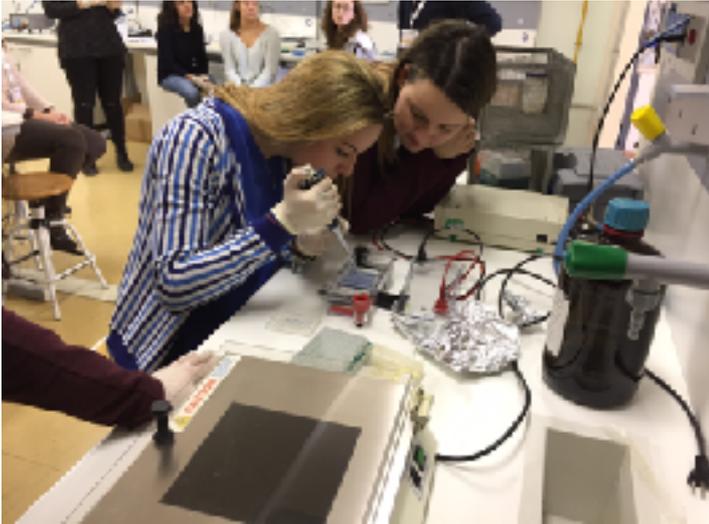
LEGAMI TRA
LE BASI

DNA genomico

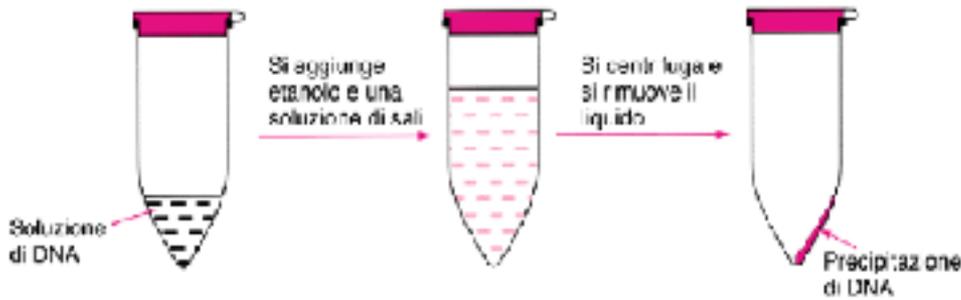
Amplificazione tramite PCR



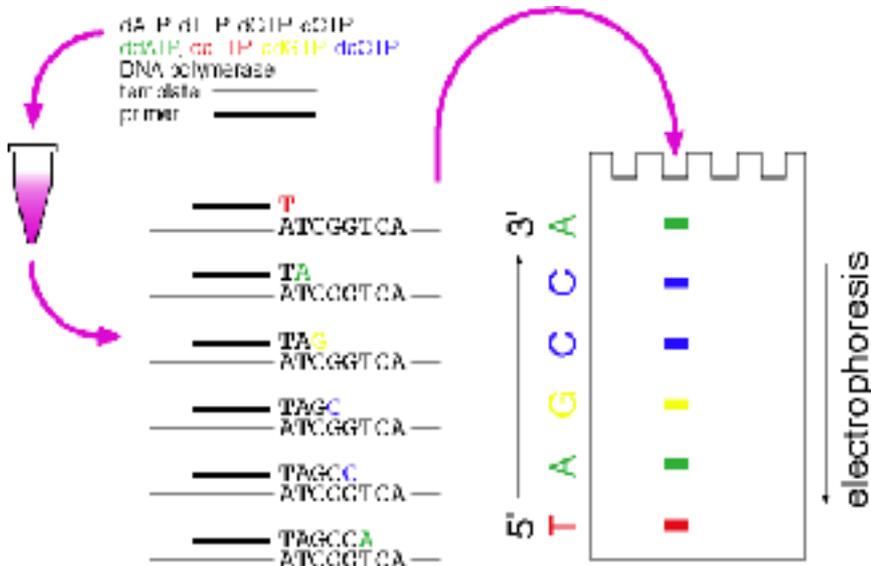
Elettroforesi su gel d'agarosio



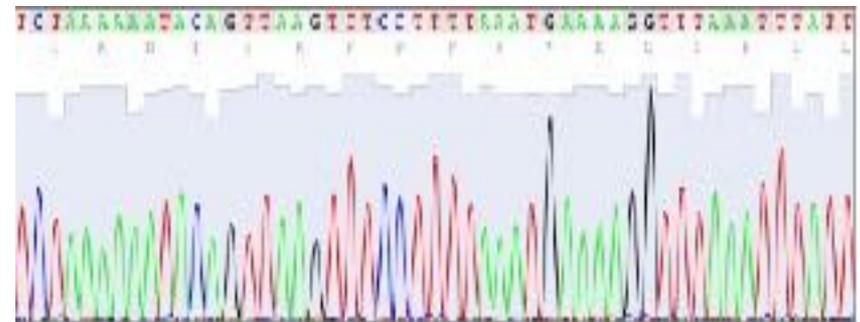
Purificazione



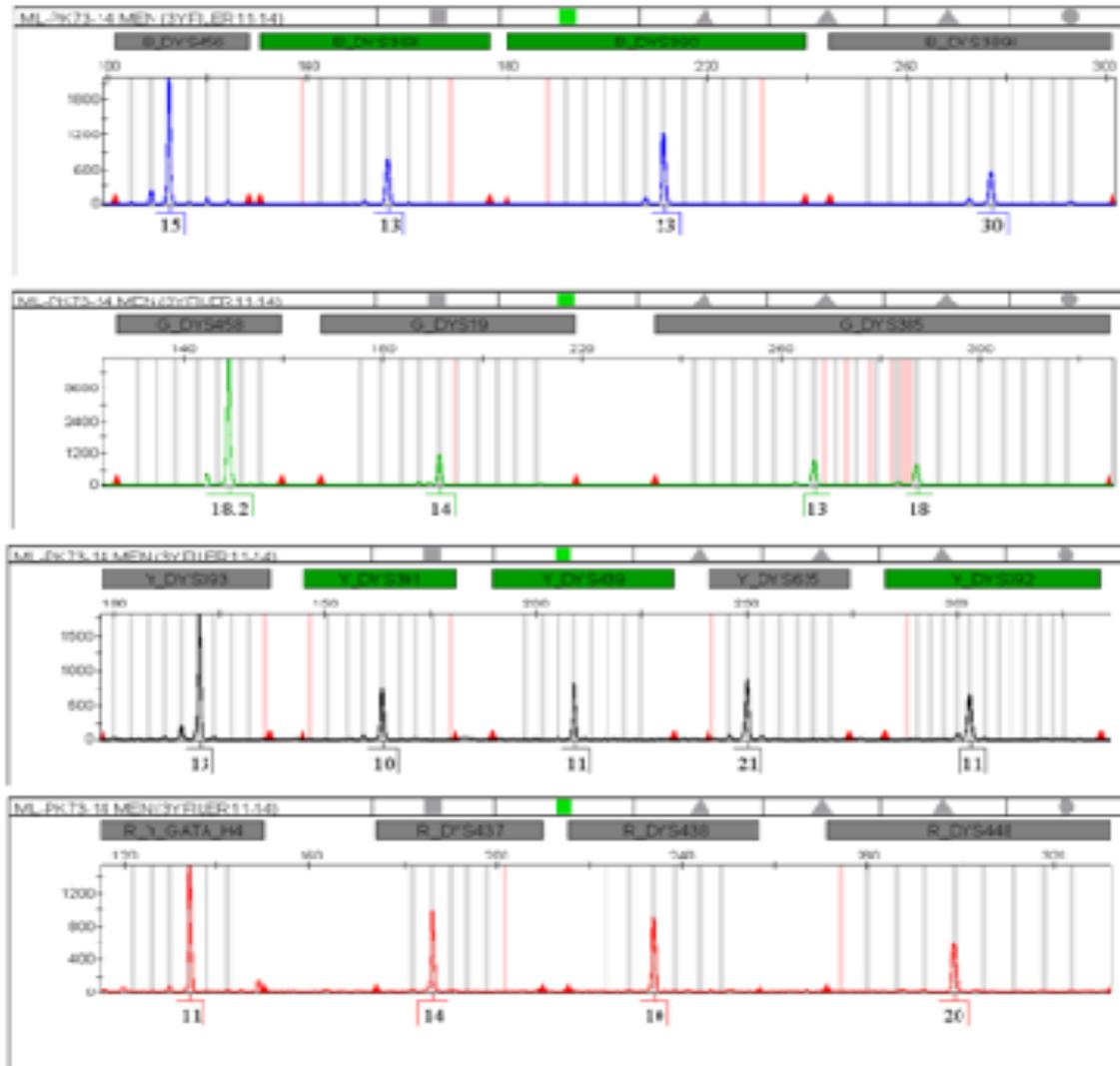
Sequenziamento



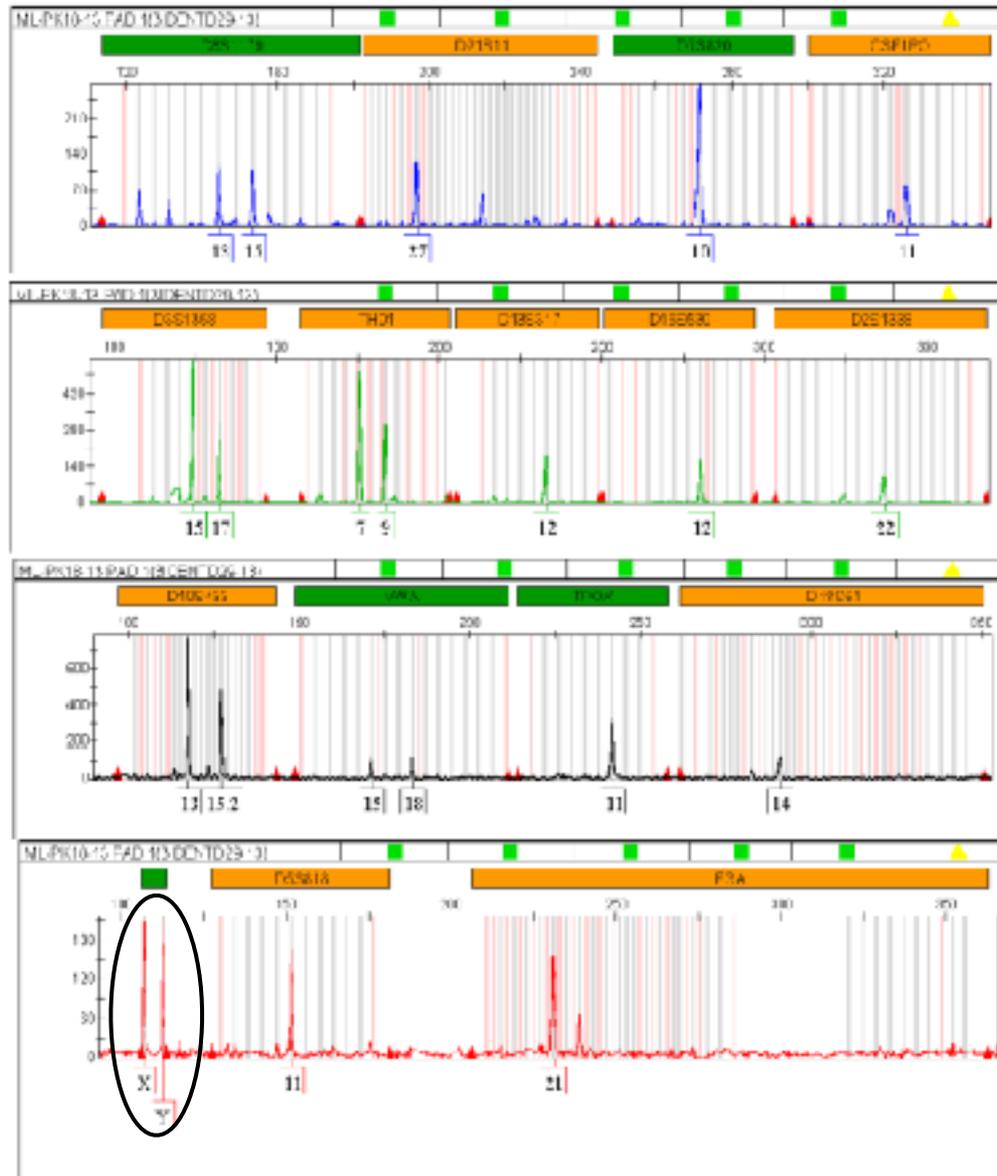
Risultato del sequenziatore automatico



Analisi STRs cromosoma Y



Analisi STRs autosomici



Risultati molecolari

- Individuo adulto sesso maschile



- Individuo adulto sesso femminile



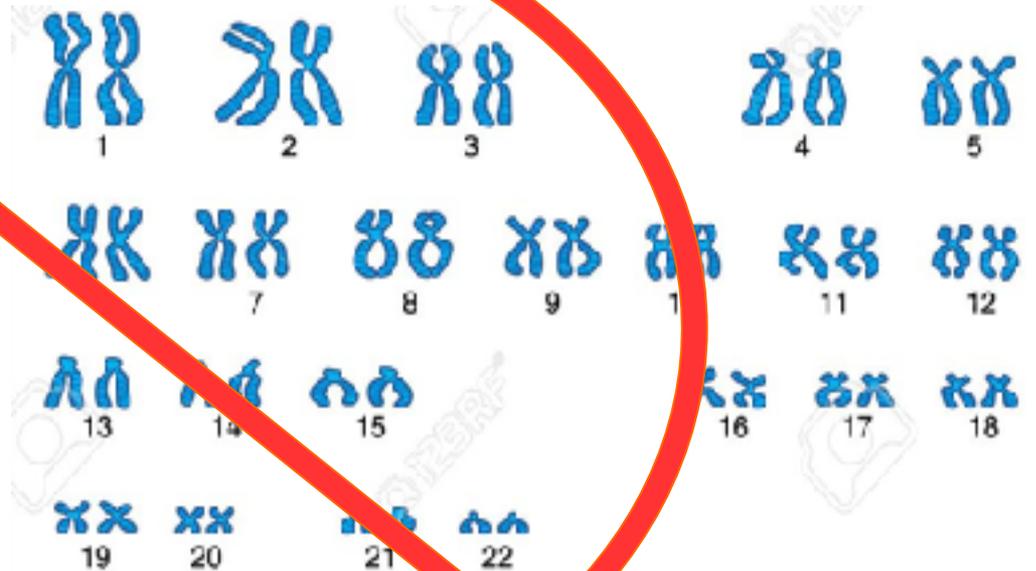
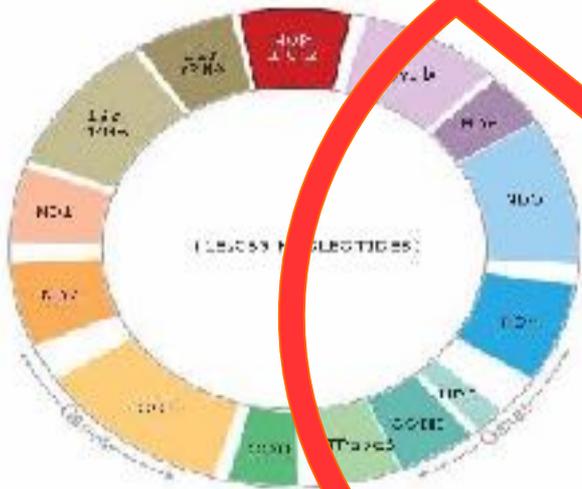
- Individuo sub-adulto sesso femminile



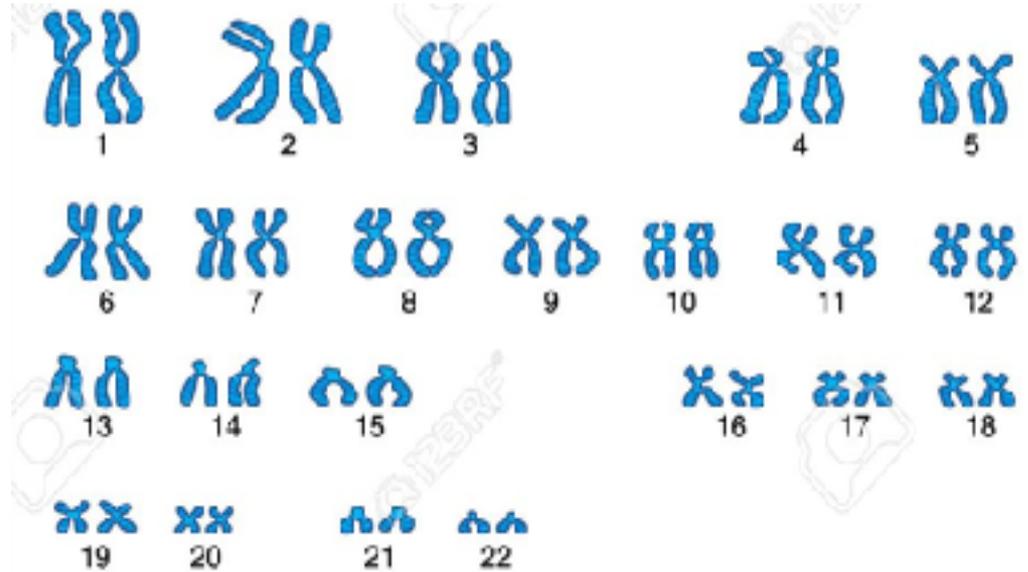
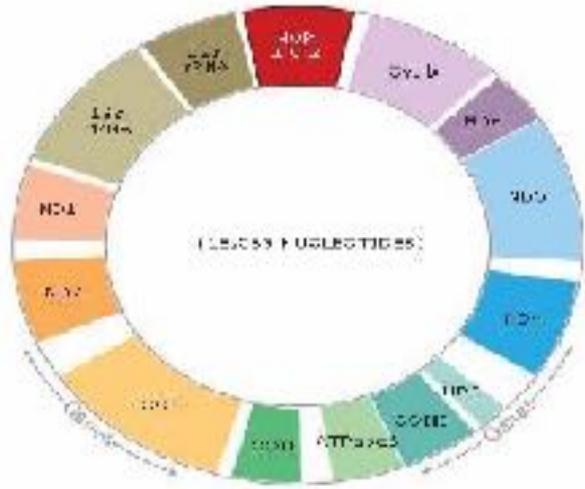
- Individuo sub-adulto sesso maschile



Individui adulti

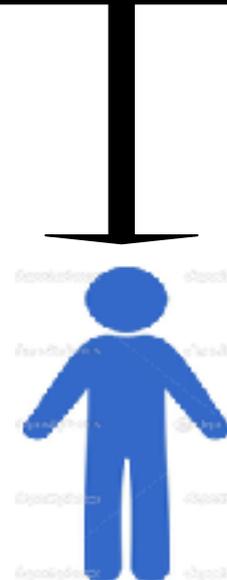
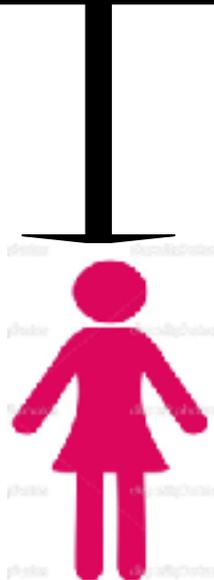


Individuo sub-adulto



100% **50% + 50%**

Conclusioni



GRAZIE PER L'ATTENZIONE!

