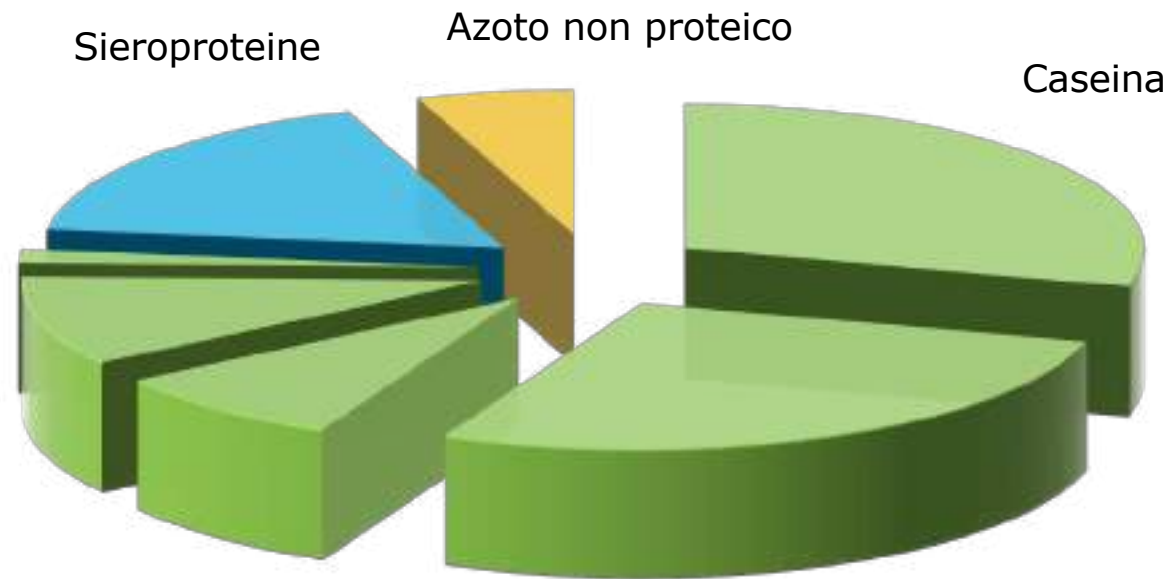
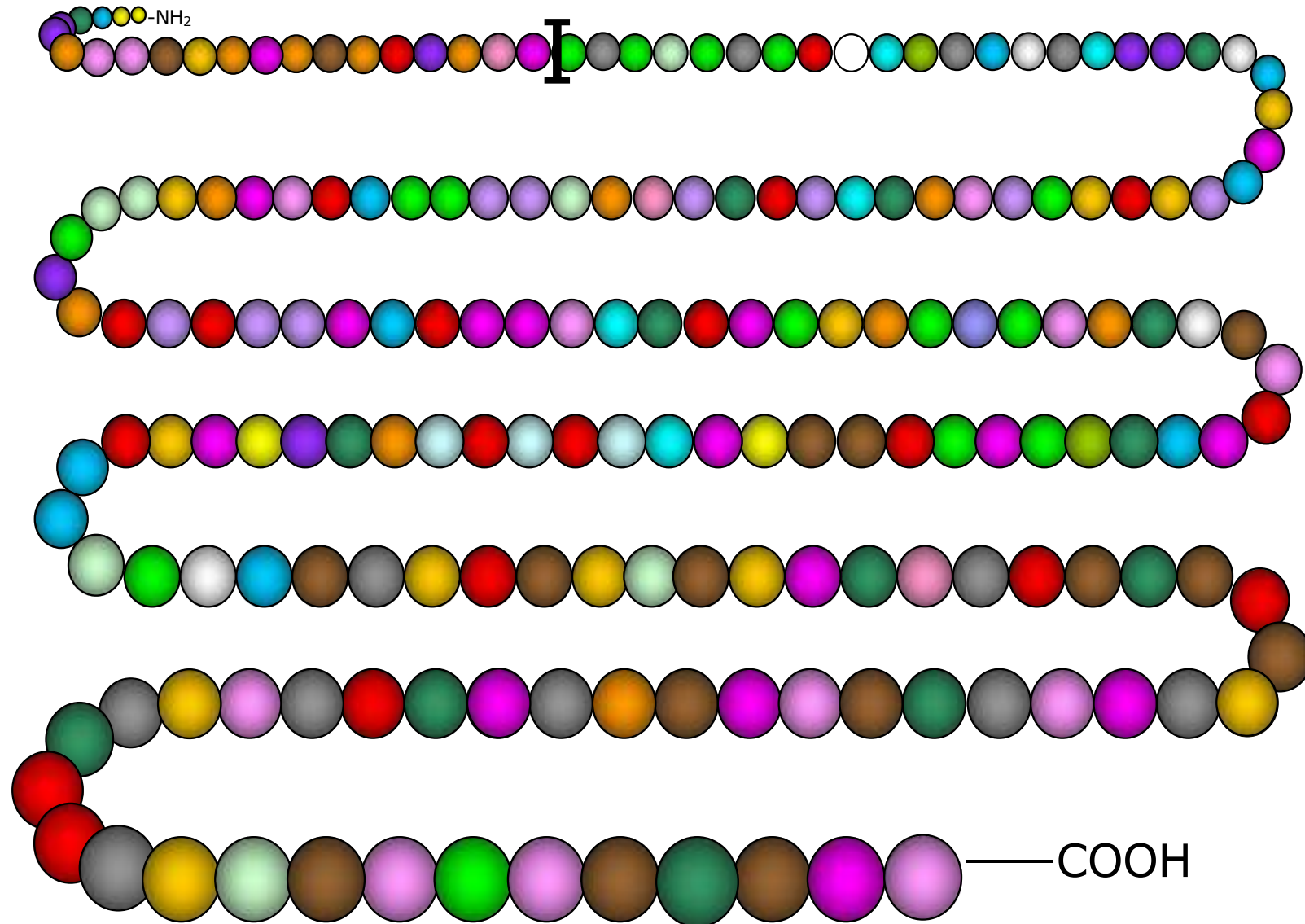
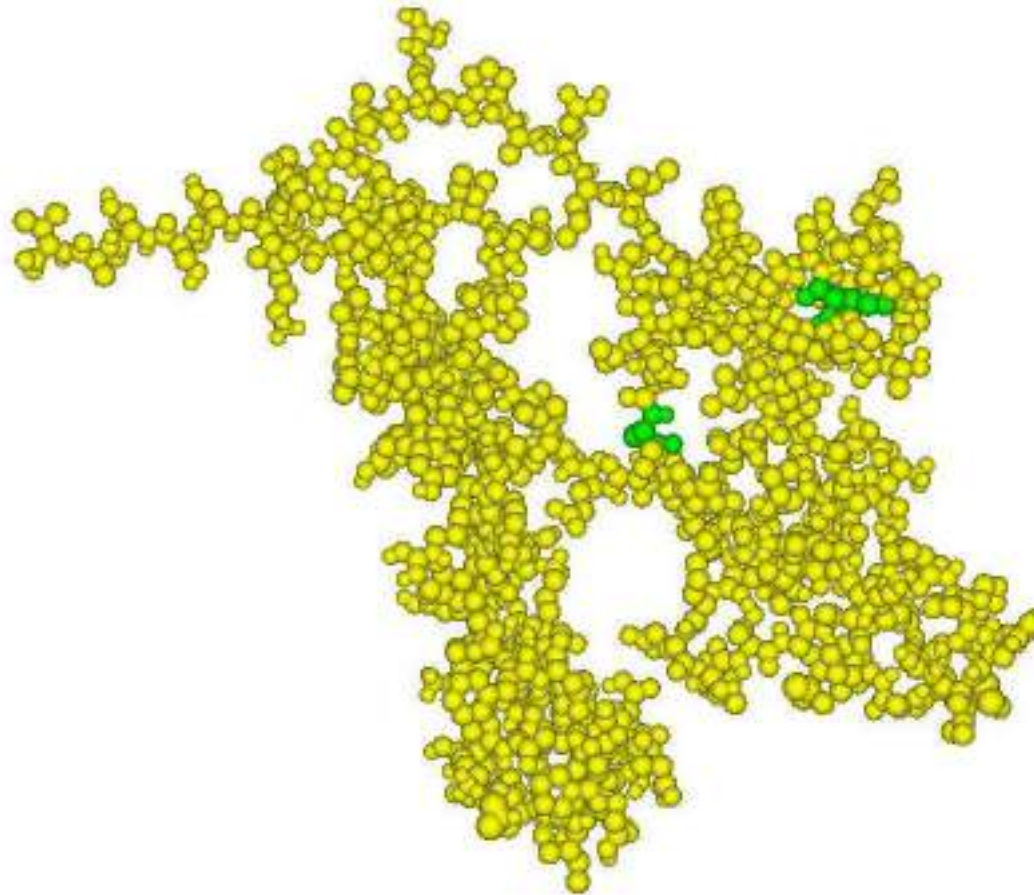


Le frazioni azotate del latte



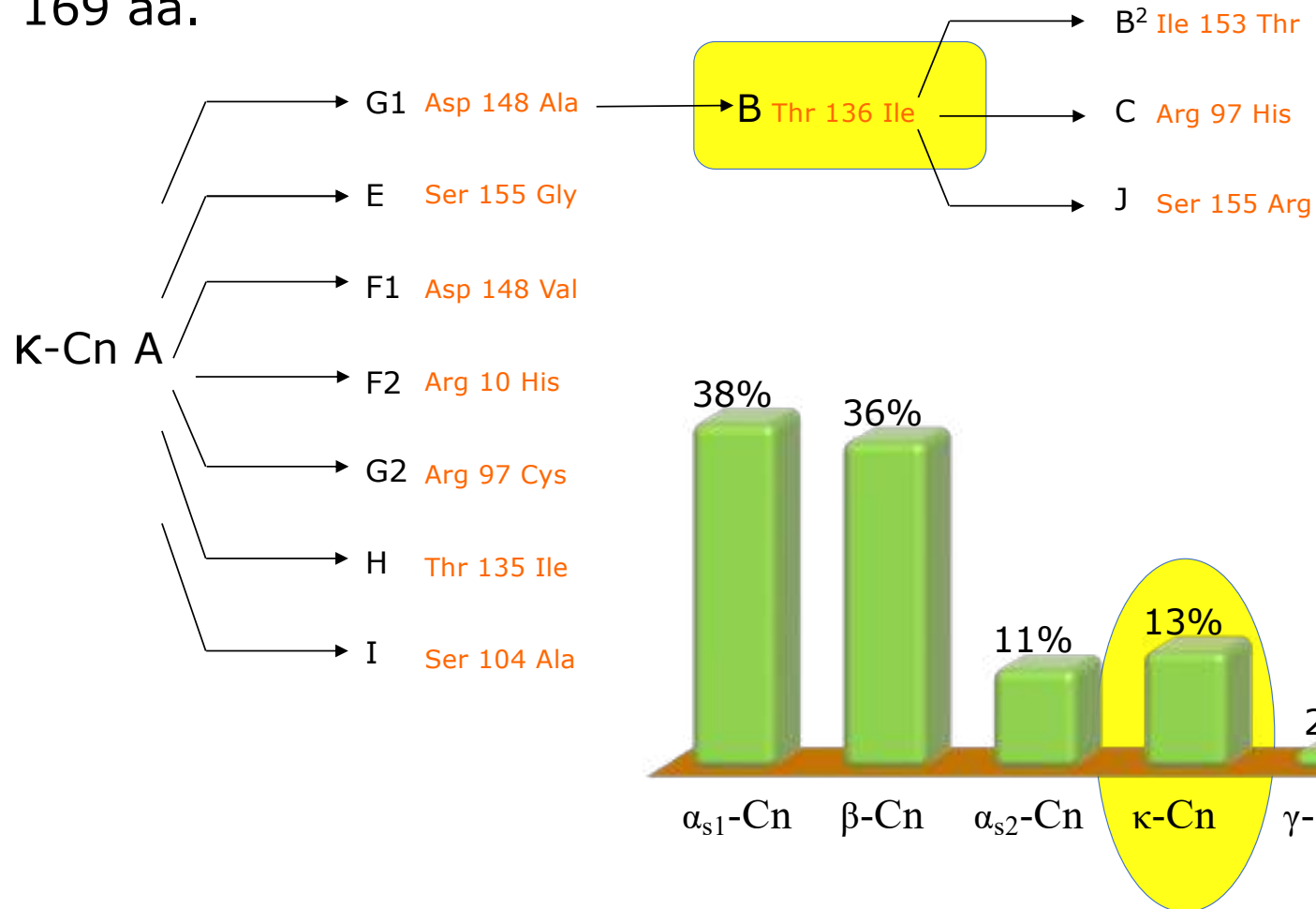


κ -caseina



Polimorfismo κ -caseina

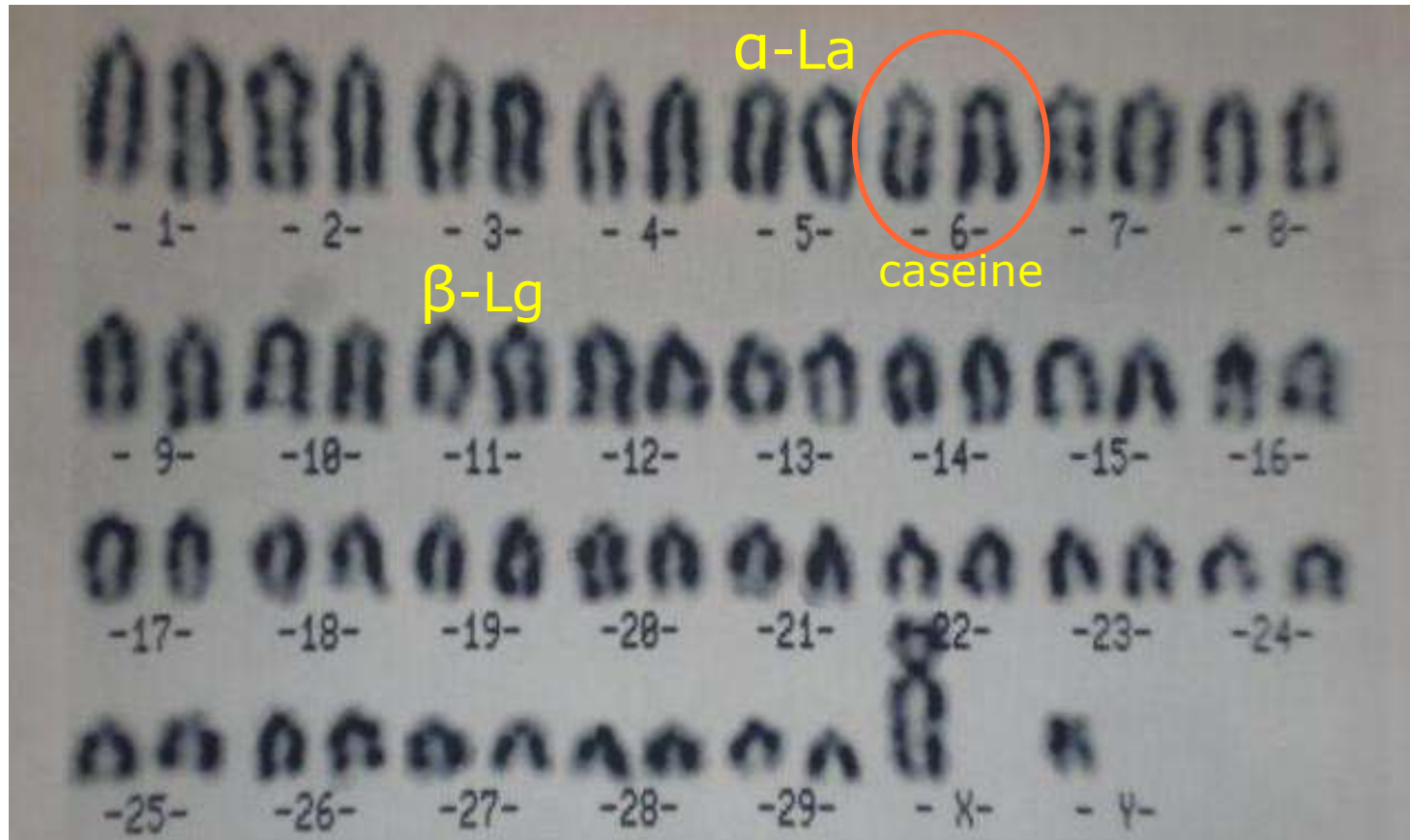
169 aa.



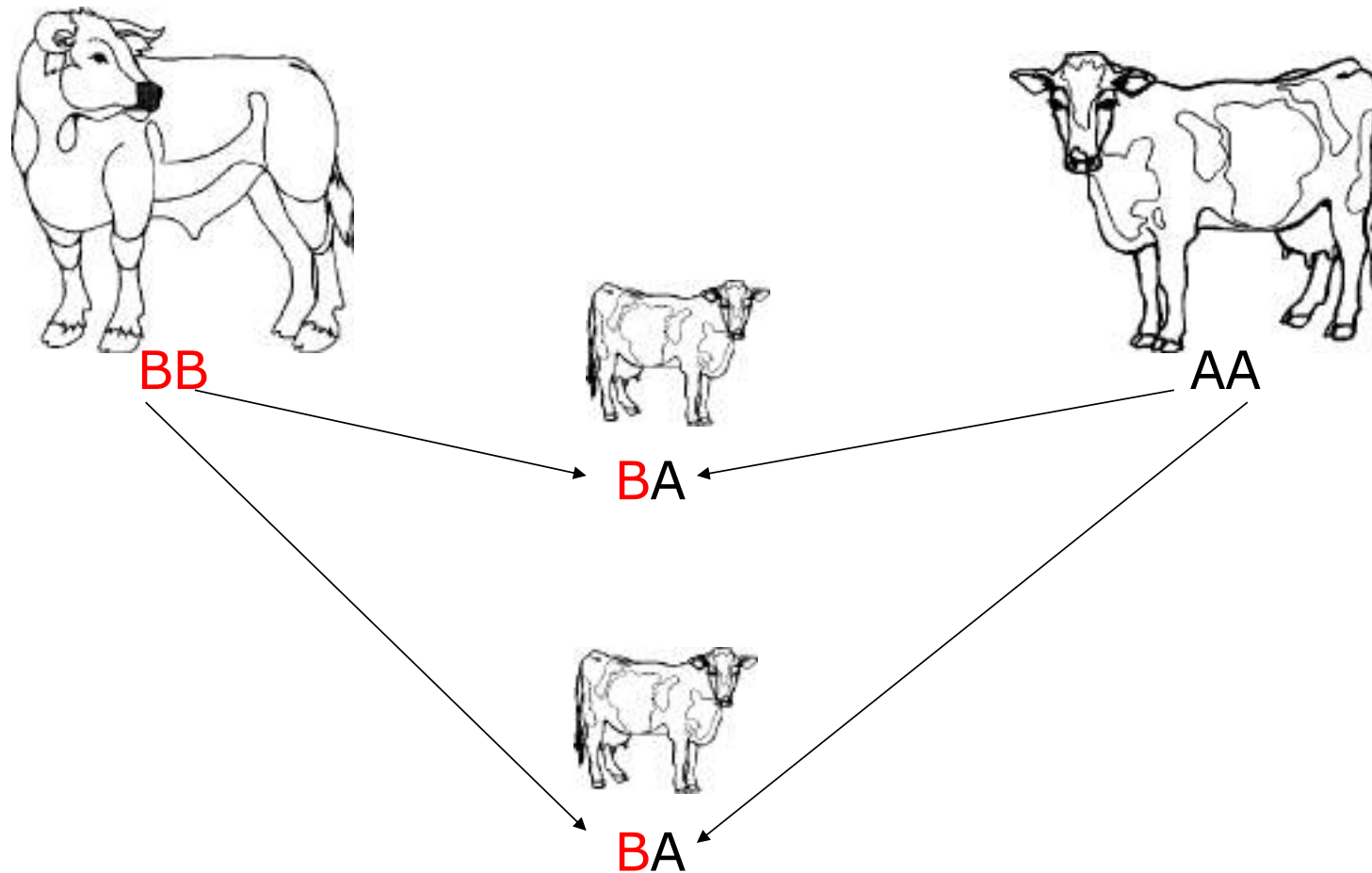
Polimorfismo genetico delle proteine del latte

Il polimorfismo delle proteine del latte è un fenomeno per cui ciascuna proteina presenta due o più forme determinate geneticamente da alleli **autosomici** e **codominanti**

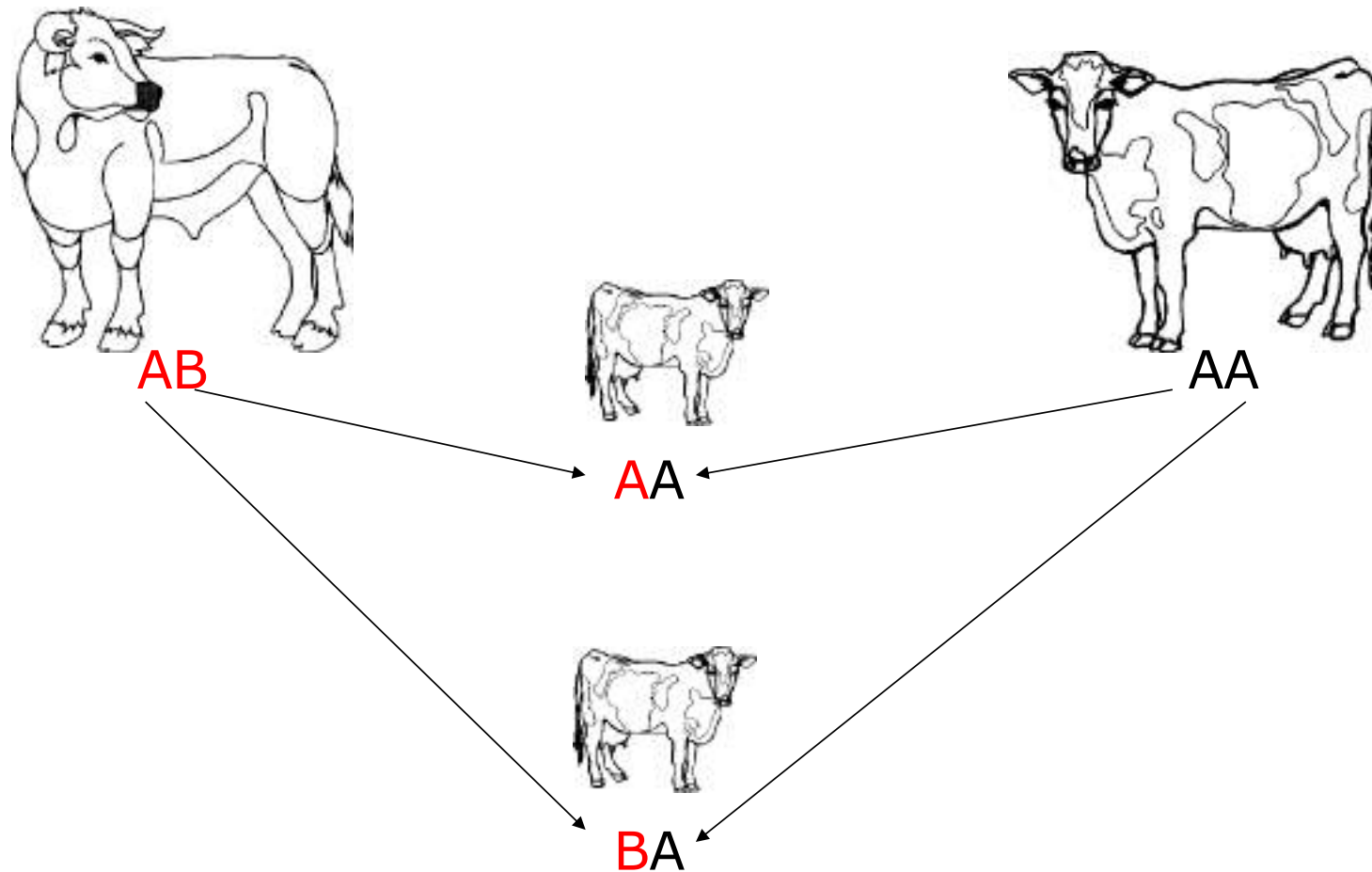
Cariogramma di toro



Trasmissione carattere

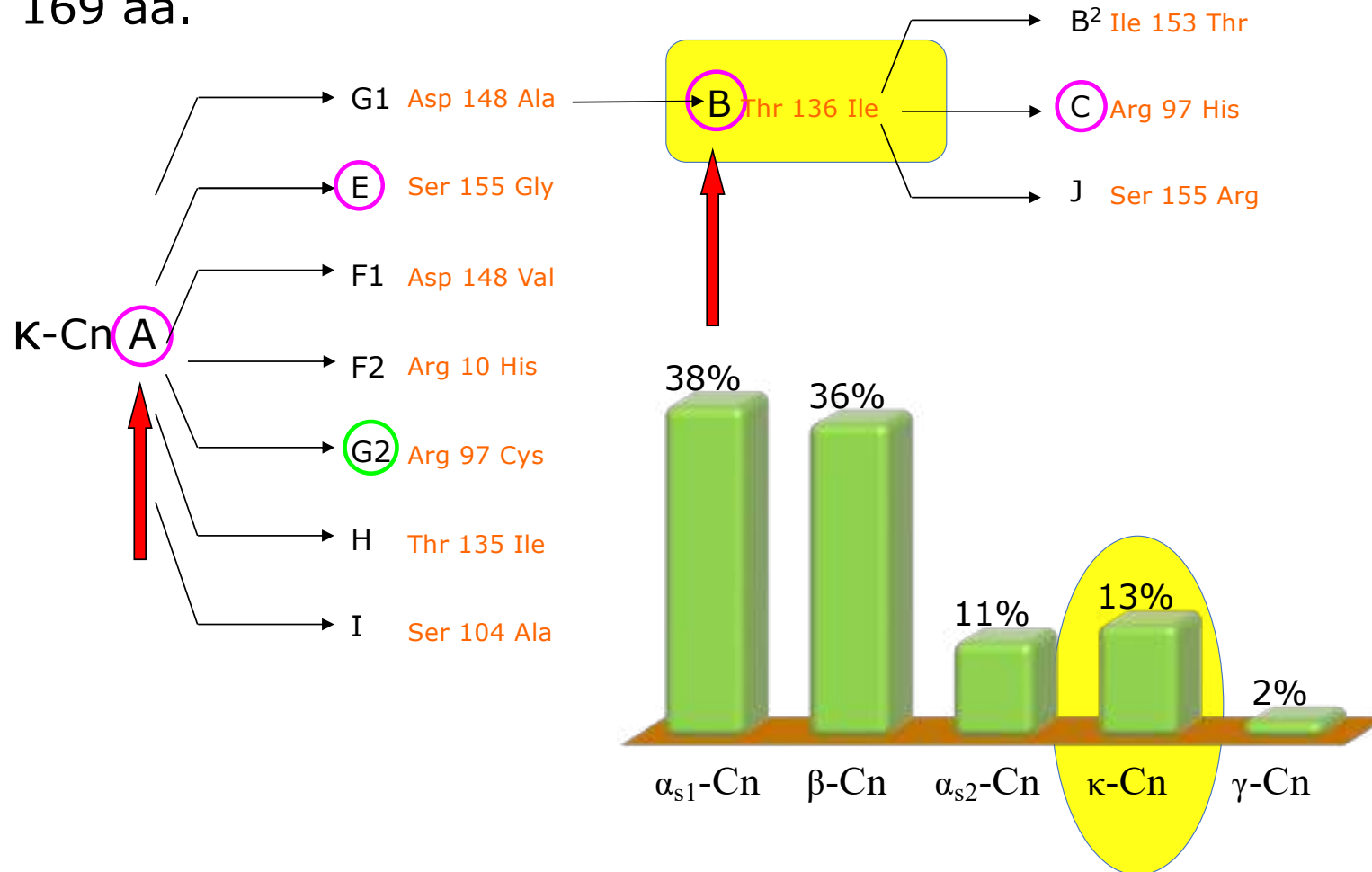


Trasmissione carattere

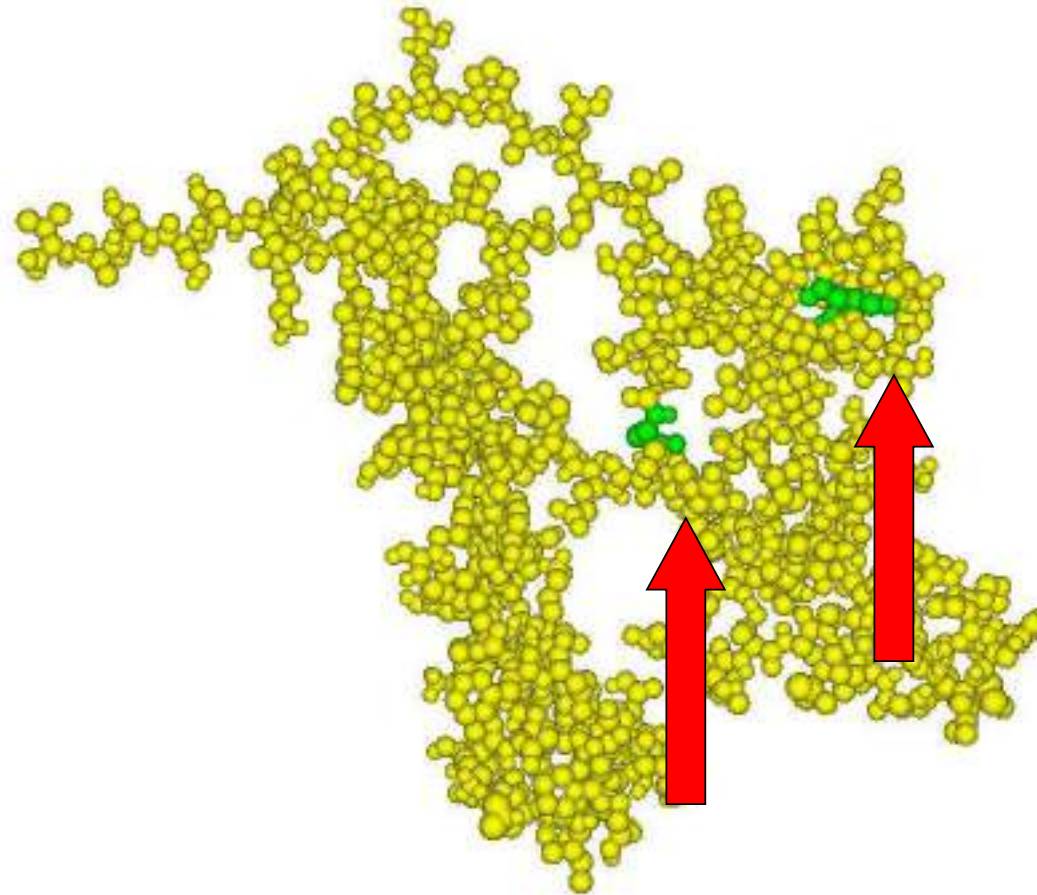


Polimorfismo κ -caseina

169 aa.



κ -caseina



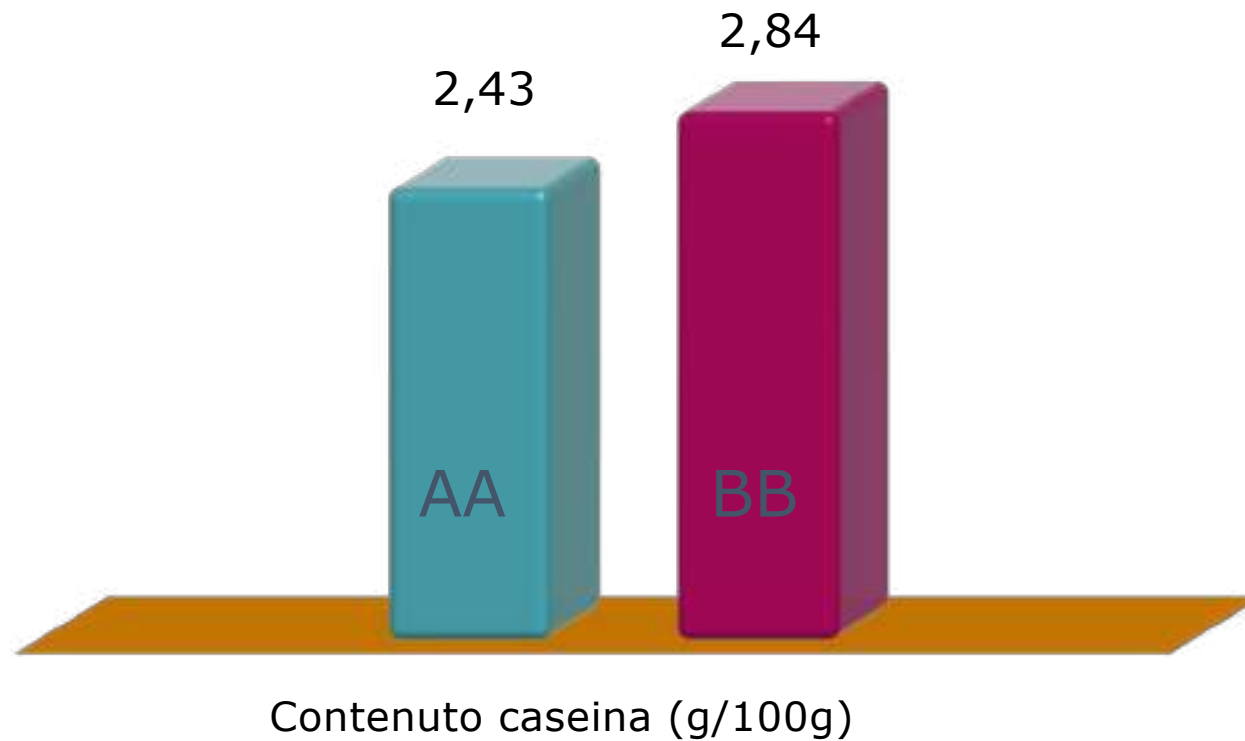
Con κ -caseina B

AA

BB

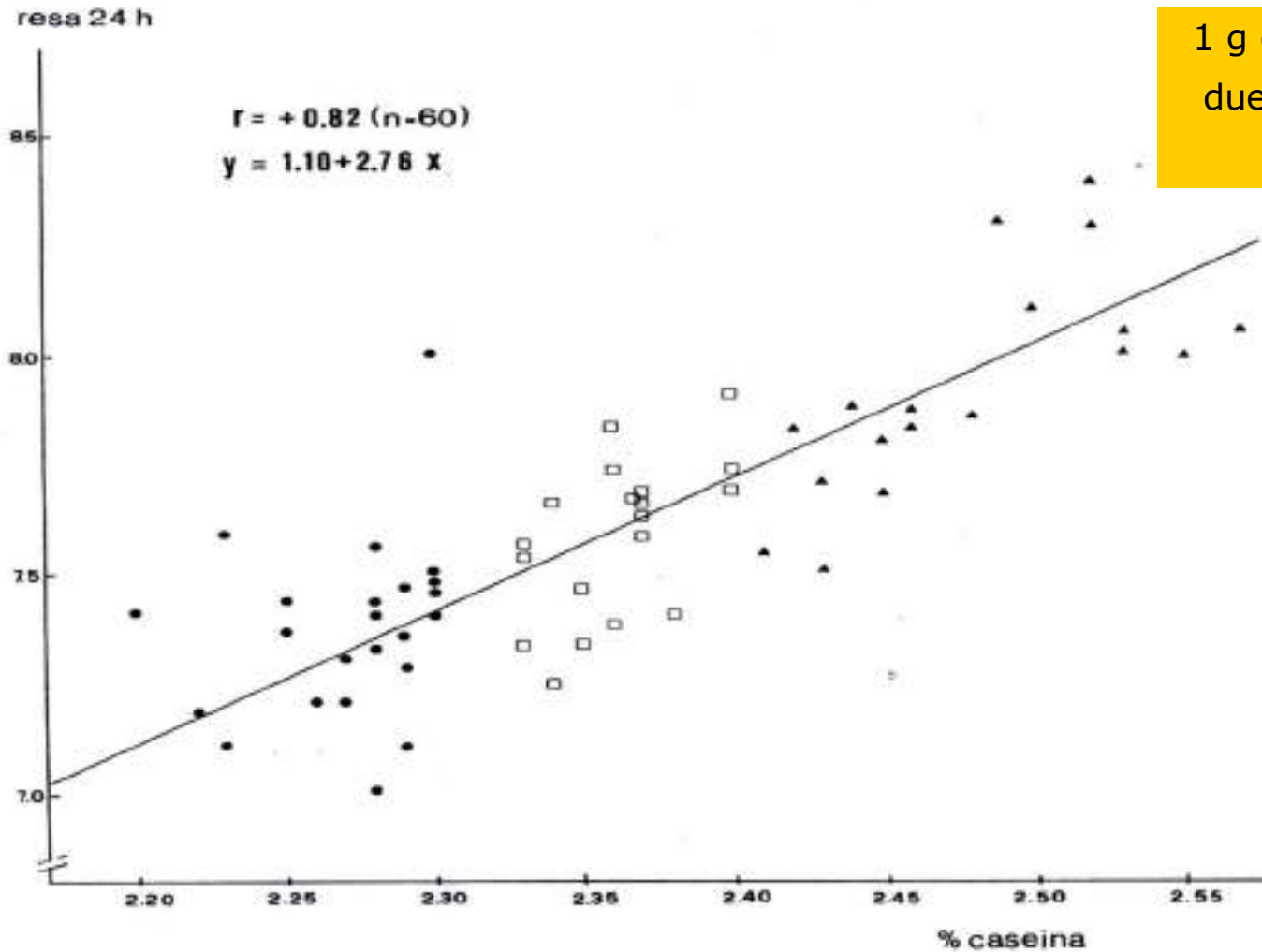
Con κ -caseina BB più caseina totale

(Ng-Kwai-Hang, 1994)



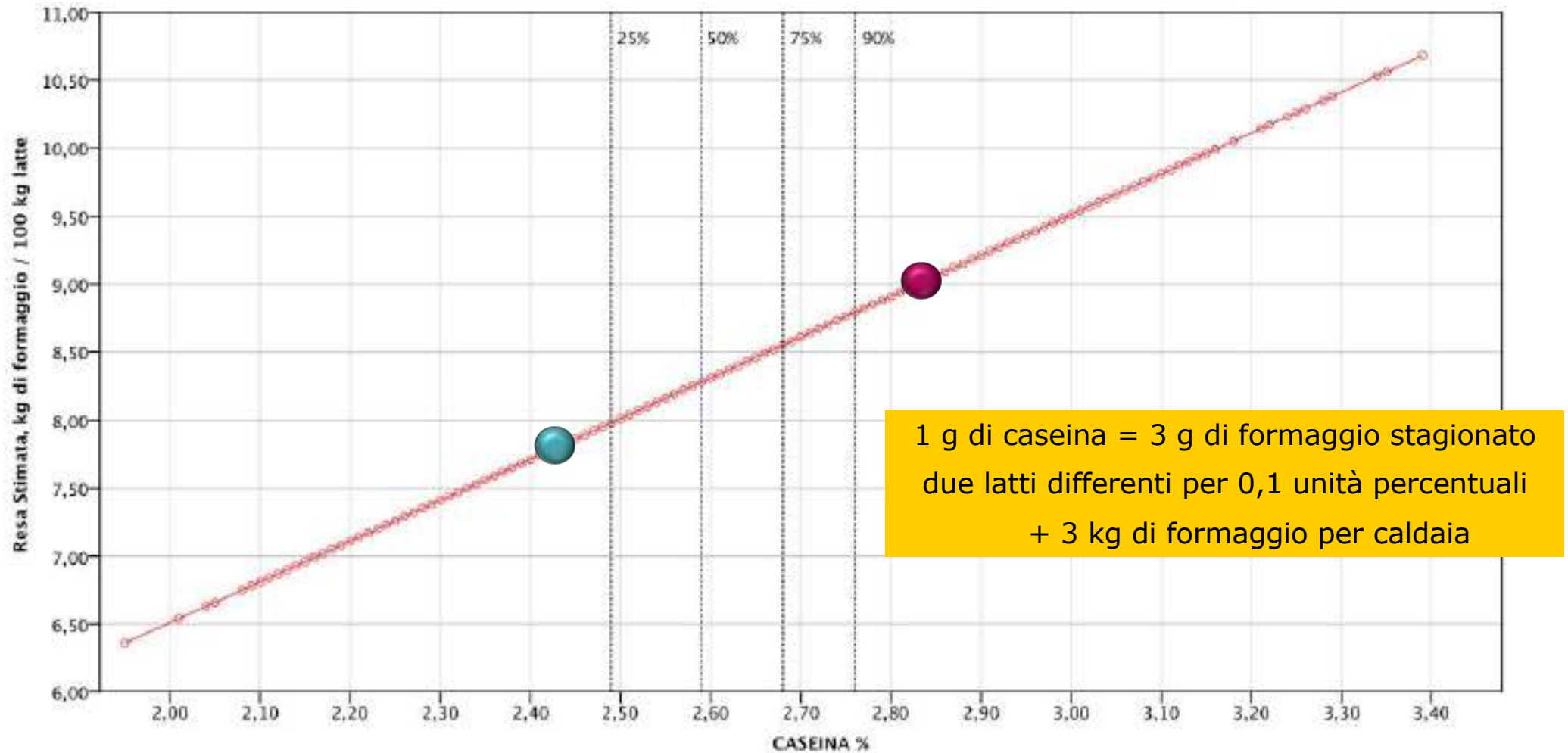
Più caseina maggiore resa in formaggio

(Pecorari e Mariani, 1990)



1 g di caseina = 3 g di formaggio stagionato
due lattici differenti per 0,1 unità percentuali
+ 3 kg di formaggio per caldaia

Resa a 24h = $1,230 \times \text{Grasso \%} + 1,709 \times \text{Caseina \%} + 0,509$ (Formaggioni et al. 2015) posto il grasso = caseina $\times 1,05$

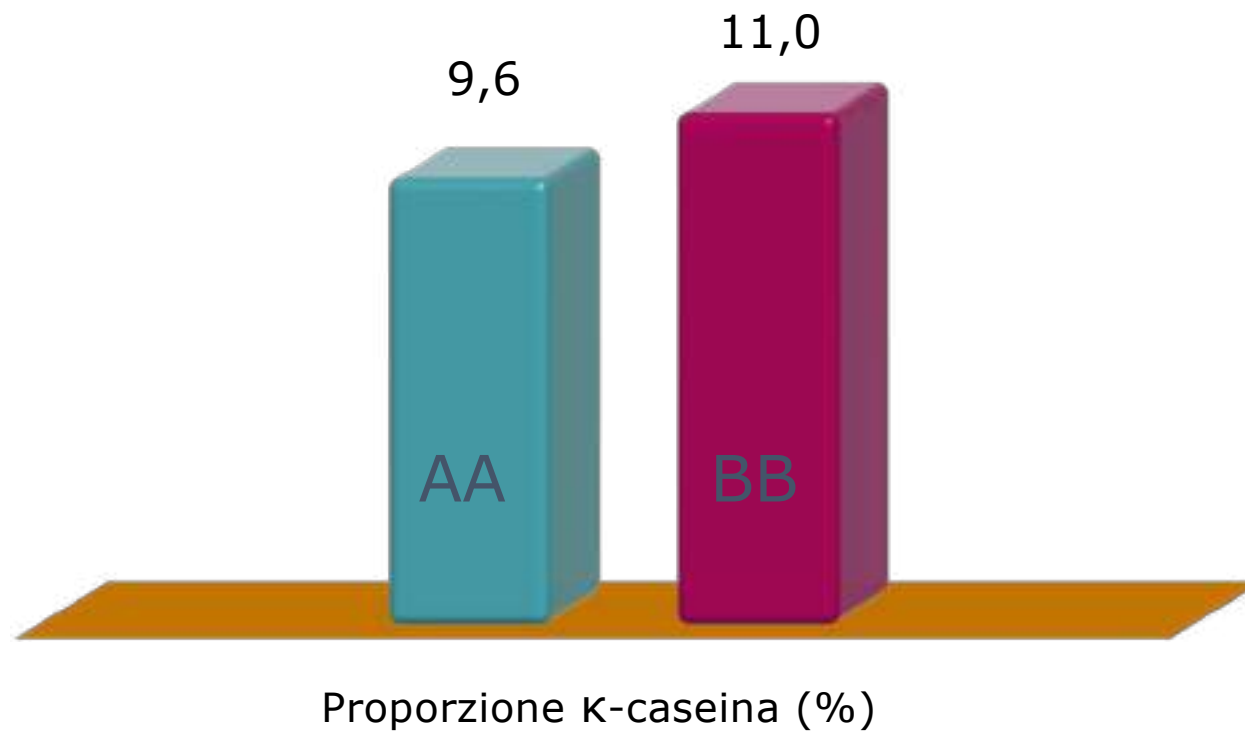


κ -caseina B

- Maggiore contenuto di caseina

Con allele κ -caseina B più κ -caseina

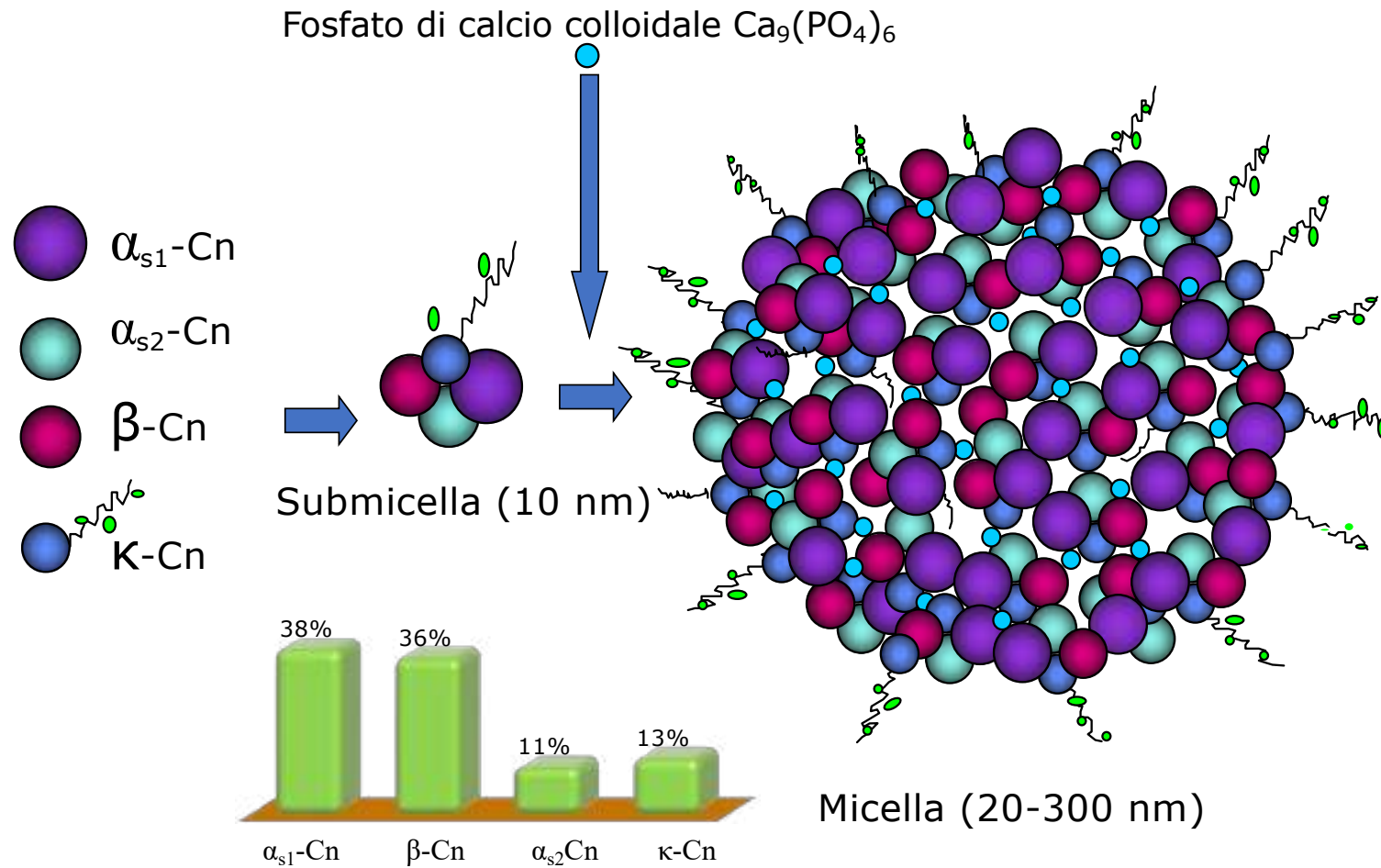
(Mariani e Summer, 1999)



κ -caseina B

- Maggiore contenuto di caseina
- Maggiore contenuto di κ -caseina

La micella di caseina

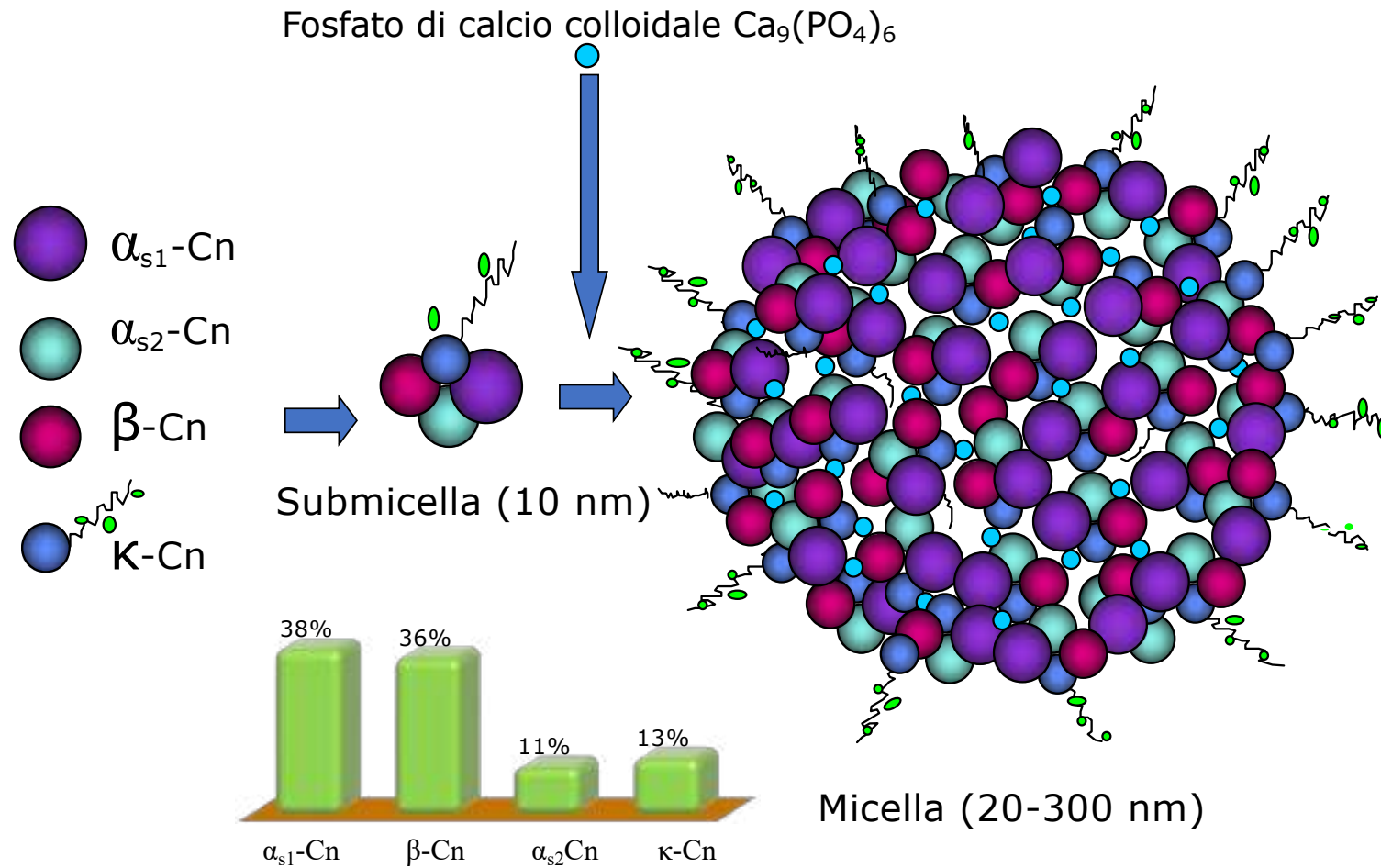


(da Martin, 1999)

κ-caseina B

- Maggiore contenuto di caseina
- Maggiore contenuto di κ-caseina
- Micelle più uniformi e più piccole

La micella di caseina



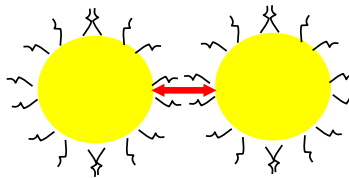
(da Martin, 1999)

Basi molecolari della stabilità delle micelle di caseina

1 - Repulsione elettrostatica: le code della k-caseina sono cariche negativamente

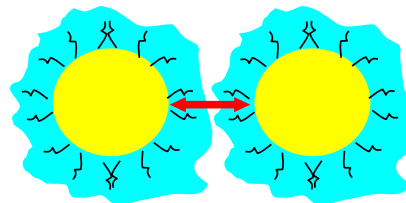


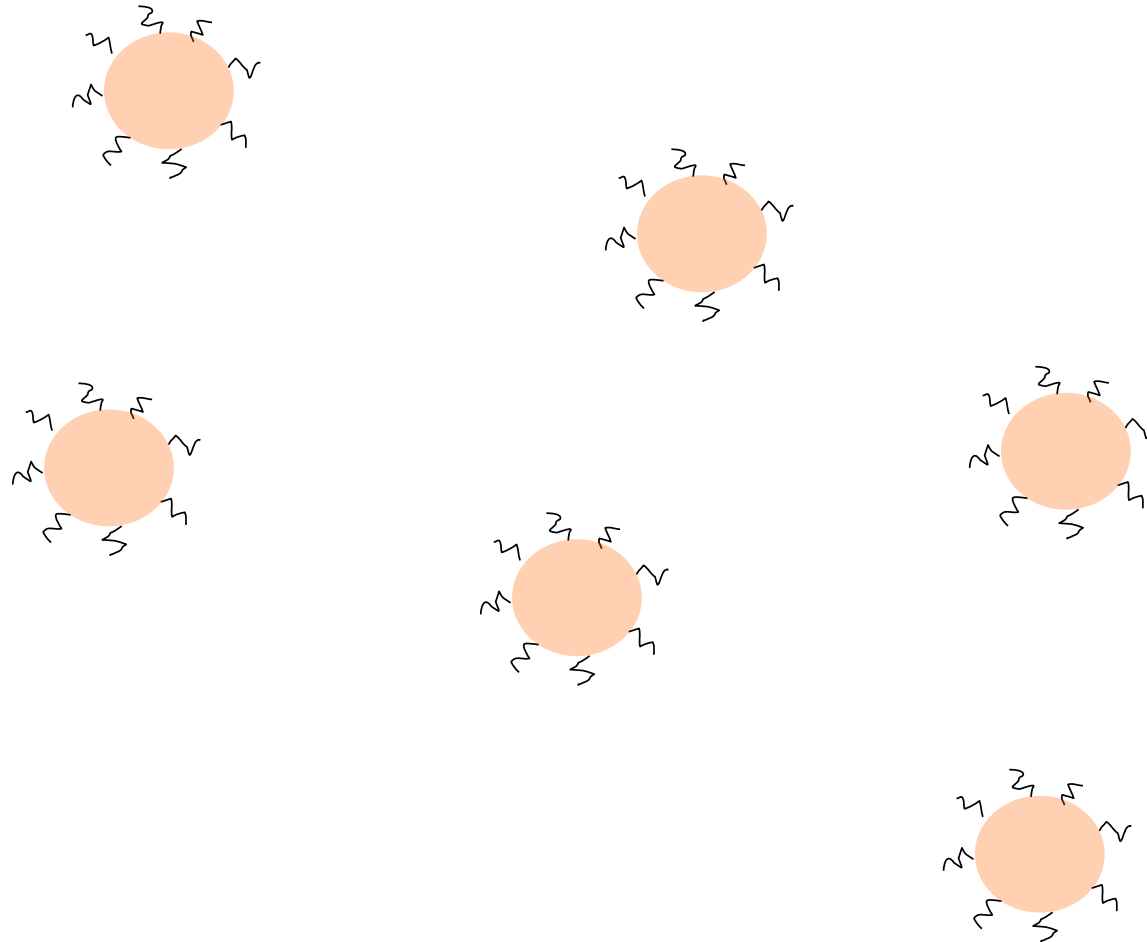
2 - Ingombro sterico (o spaziale) delle code di k-caseina



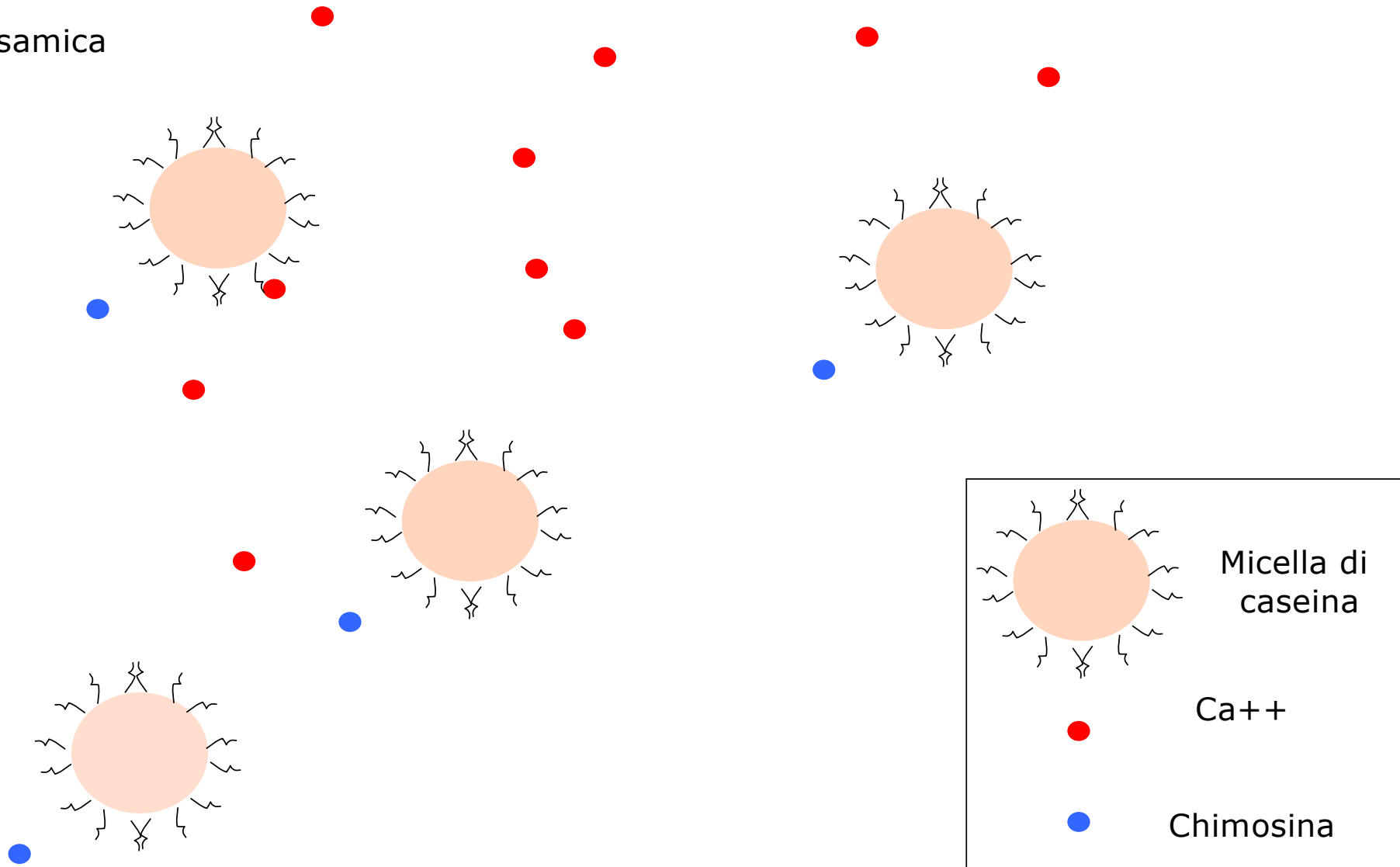
Le tre forze sono
presenti
simultaneamente

3 - Sfera di solvatazione (acqua) associata alle code di k-caseina

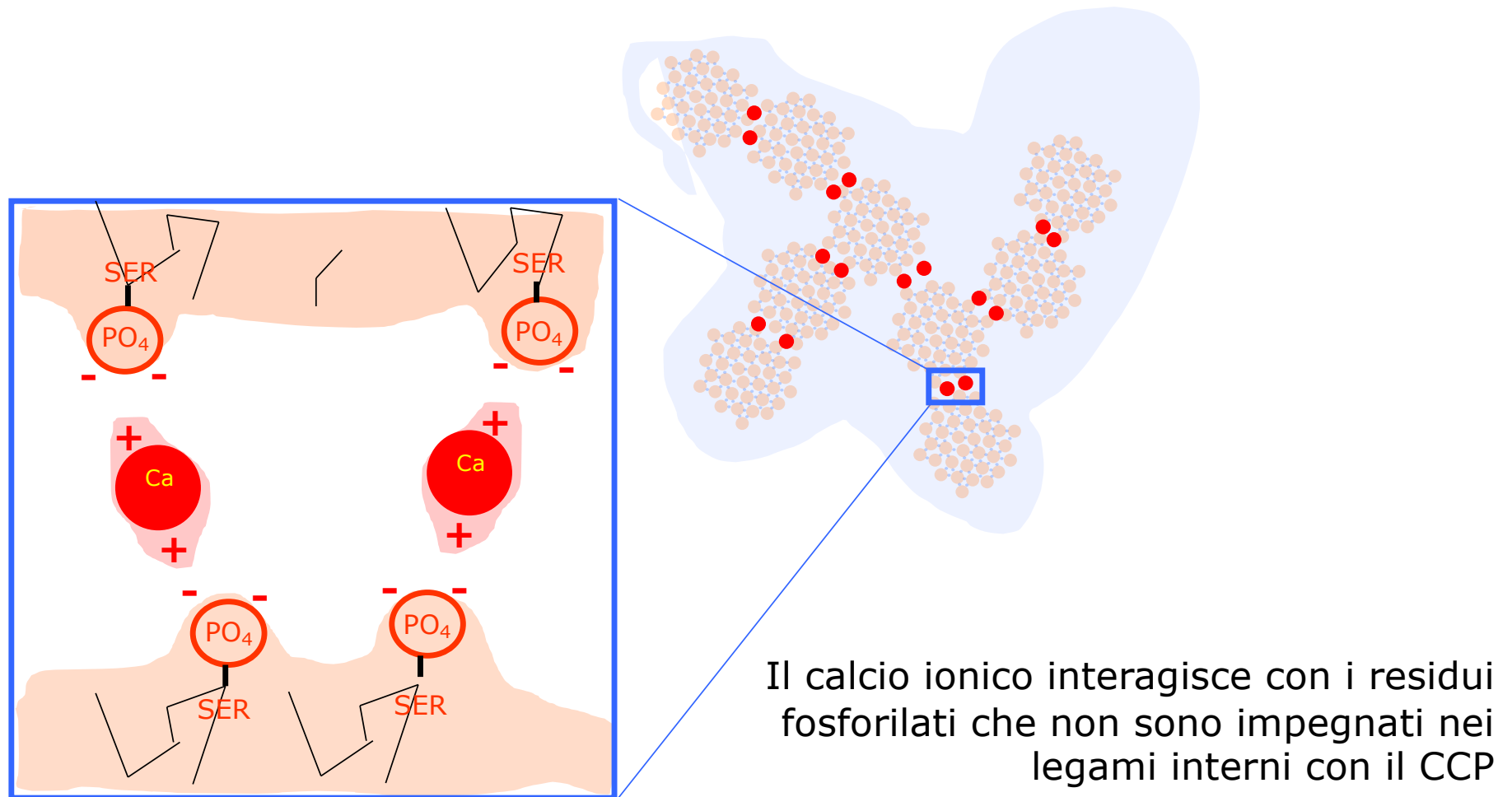




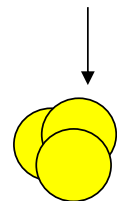
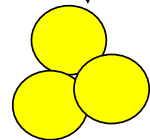
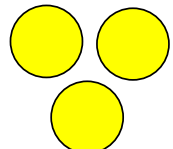
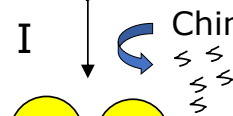
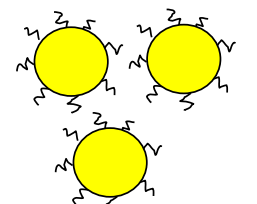
Coagulazione presamica



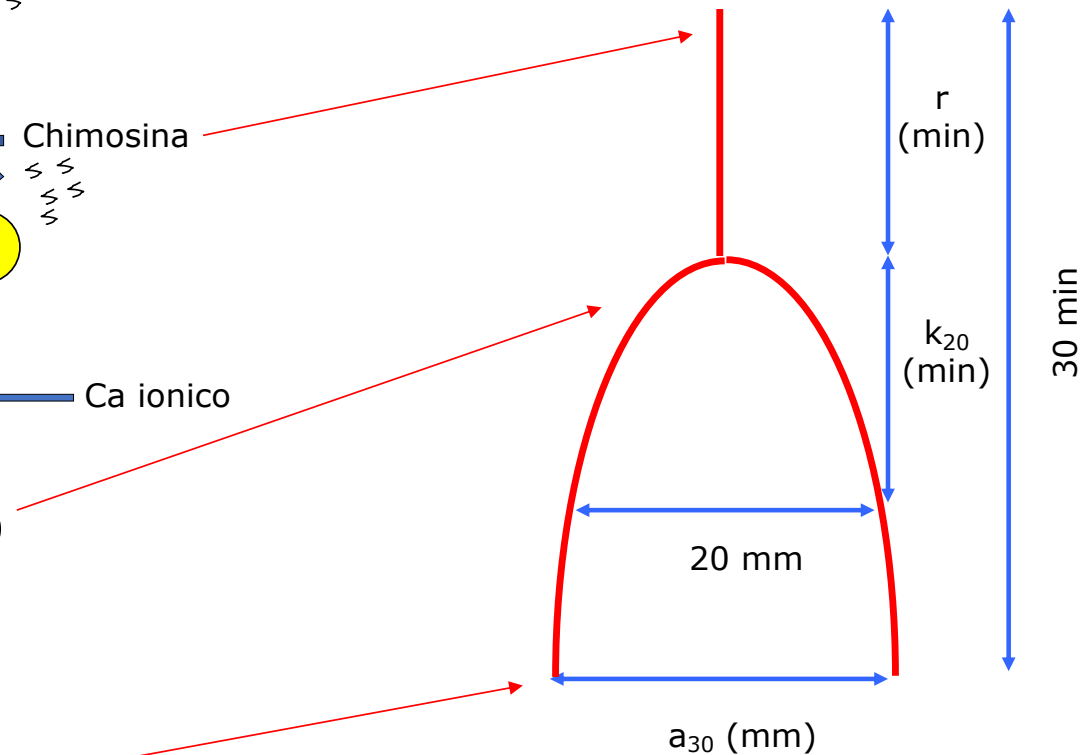
Minerali e coagulazione del latte – ruolo del Ca ionico solubile



Coagulazione presamica

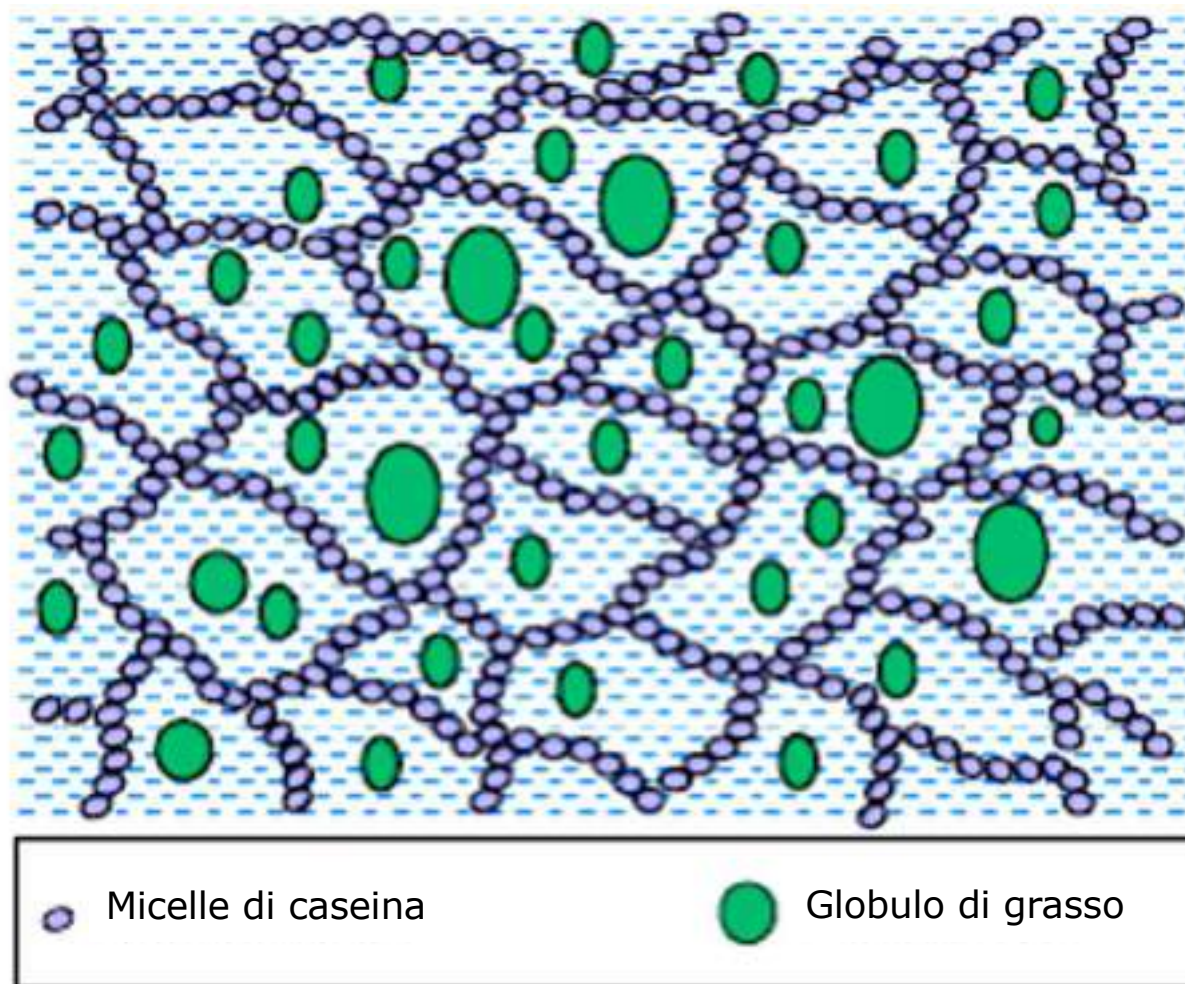


⌞ = Frammento carbossiterminale 106-169



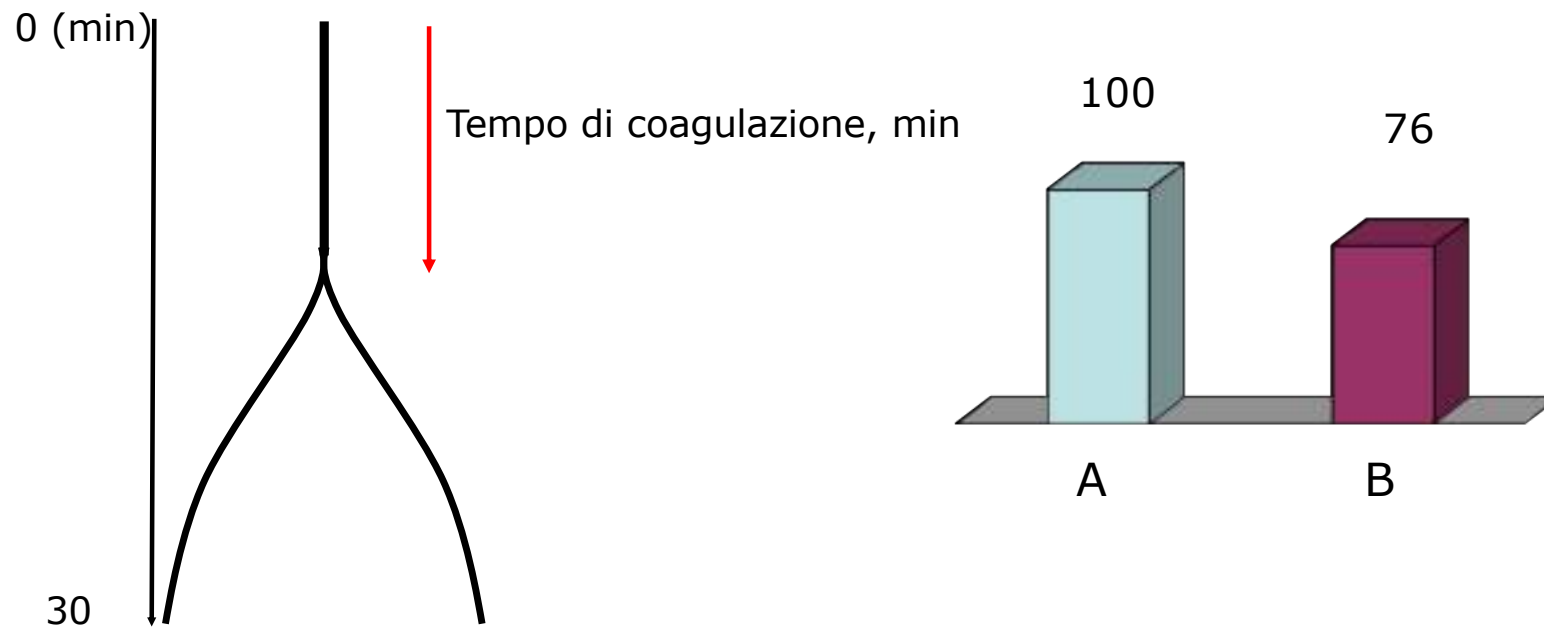
Schema della matrice del formaggio

(da Fox et al., 2000 modificato)



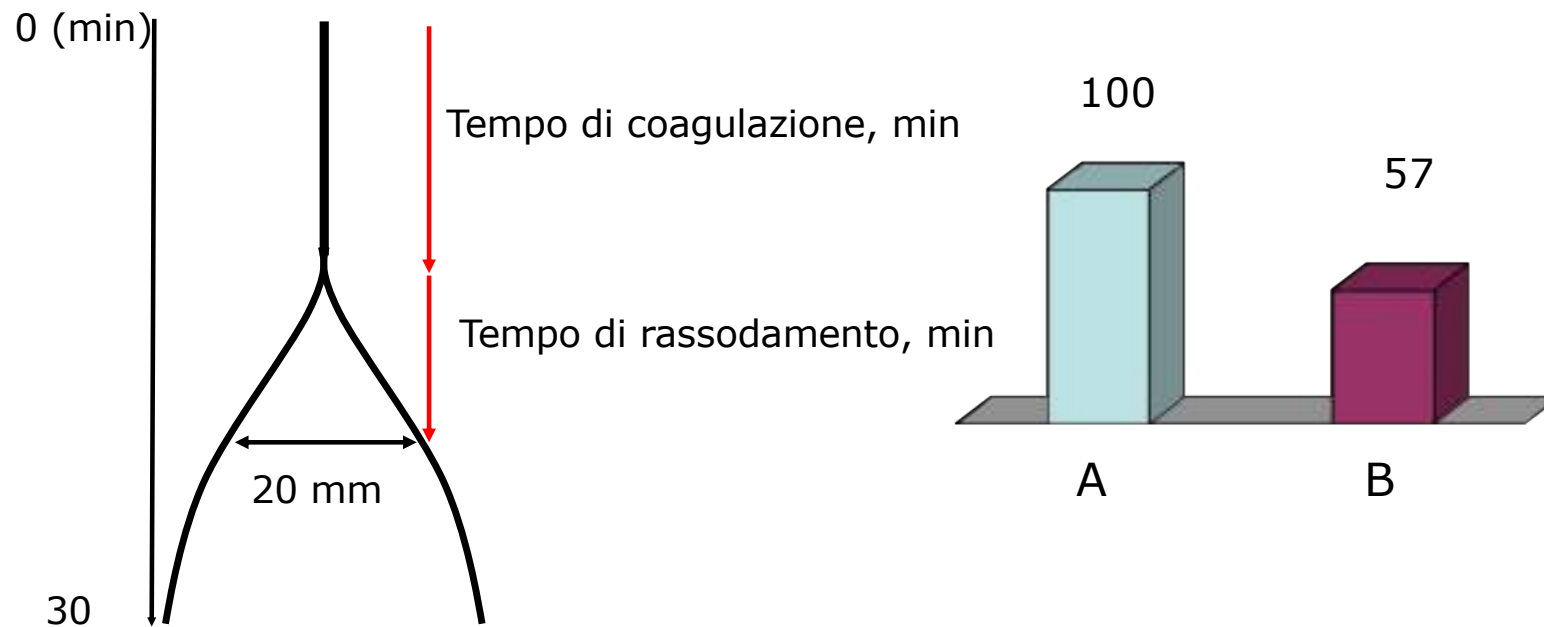
Con κ -caseina B minore tempo coagulazione

(Mariani e Summer, 1999)



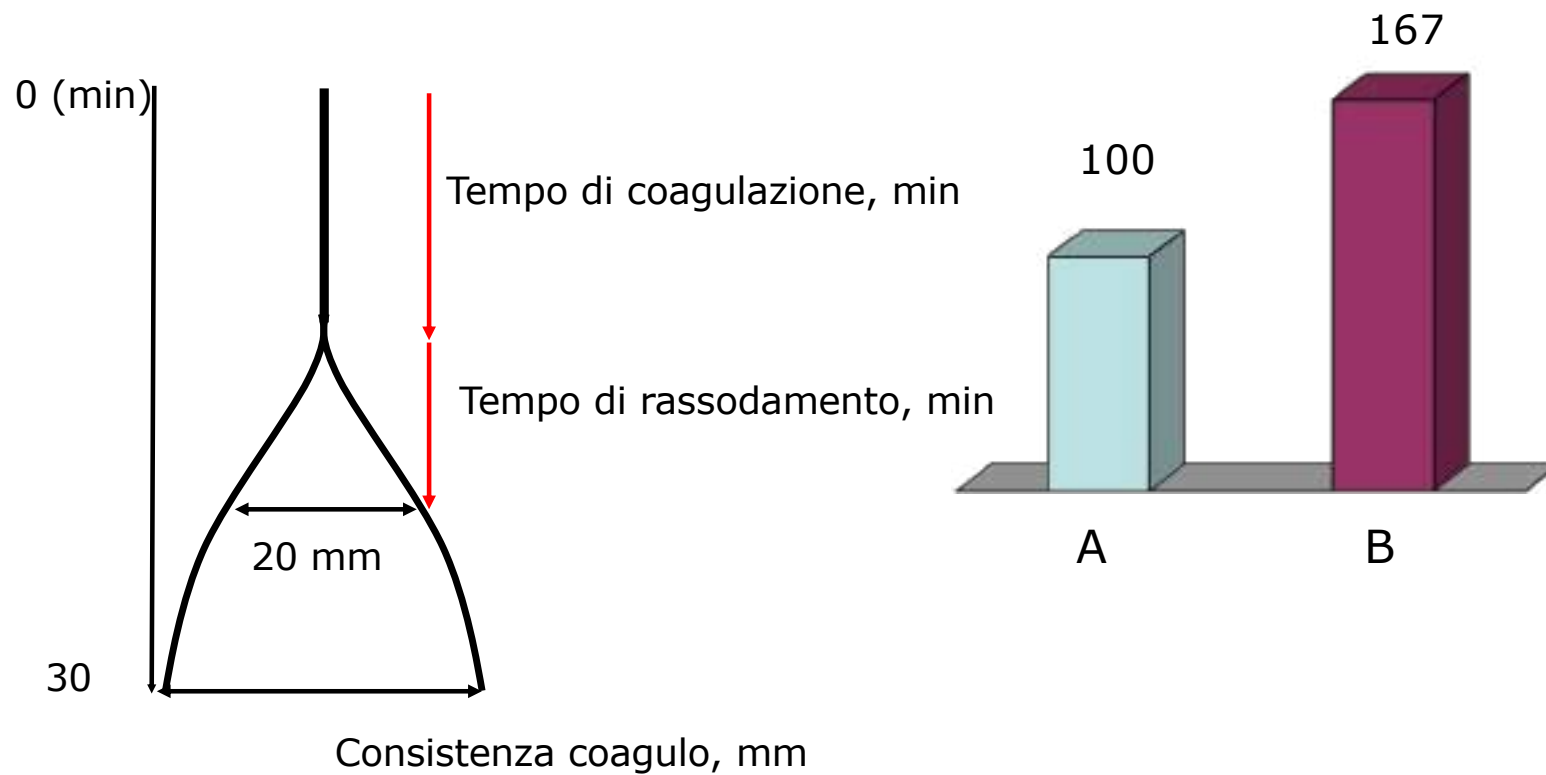
Con κ -caseina B minore tempo coagulazione

(Mariani e Summer, 1999)



Con κ -caseina B minore tempo coagulazione

(Mariani e Summer, 1999)



Con κ -caseina B migliore coagulazione

(Mariani e Summer, 1999)

