

Το ανθρώπινο DNA:

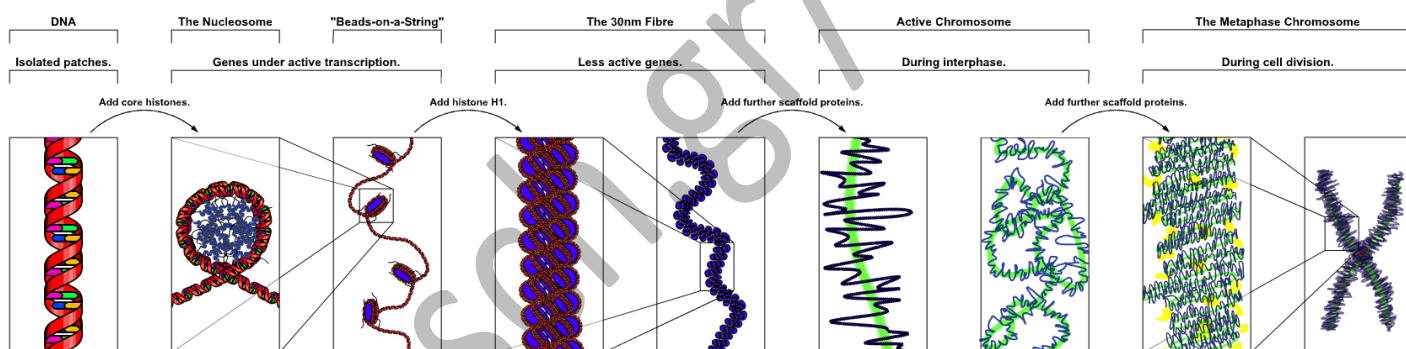
- αποτελείται από 6 δισεκατομμύρια ζεύγη αζωτούχων **βάσεων** (απέχουν 0,34nm μεταξύ τους) [1960's]
- έχει μήκος 2 μέτρα
- οργανώνεται σε 46 **χρωμοσώματα** [since 1880]
- αποτελείται από 40-50.000 **γονίδια** (στην πράξη 23.000) [μέχρι και σήμερα -2017- ανανεώνεται αριθμός τους]

Ένα ανθρώπινο χρωμόσωμα:

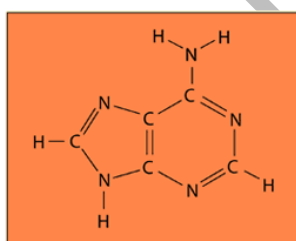
- μπορεί να έχει μέχρι 500 εκατομμύρια αζωτούχες **βάσεις**
- έχει ύψος από 0,2-20μm (1μm=0,001mm)
- περιέχει χιλιάδες **γονίδια**

Ένα ανθρώπινο γονίδιο:

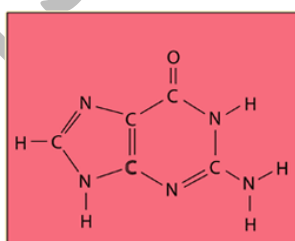
- μπορεί να έχει 1.000 – 1.000.000 αζωτούχες **βάσεις**
- έχει μήκος 340nm–340μm (1nm=0,000001mm)



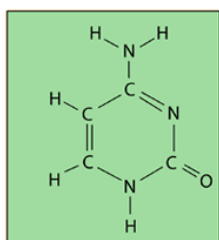
Χημικοί τύποι Αζωτούχων Βάσεων



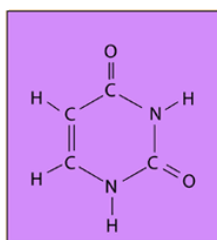
Adenine



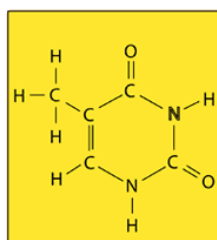
Guanine



Cytosine

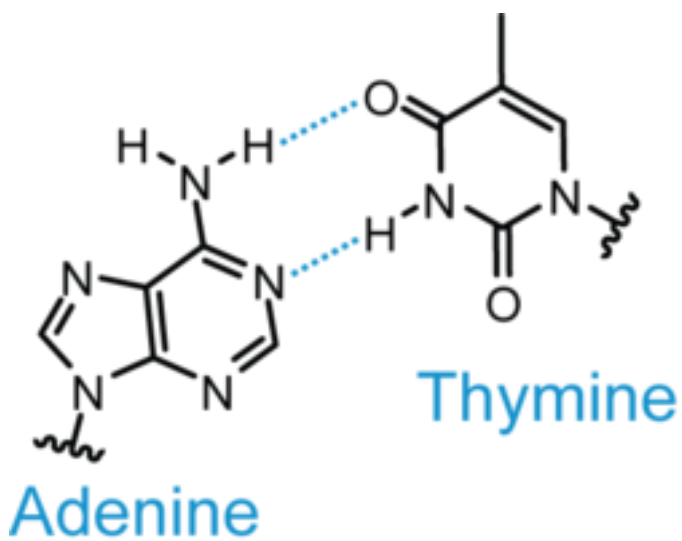


Uracil

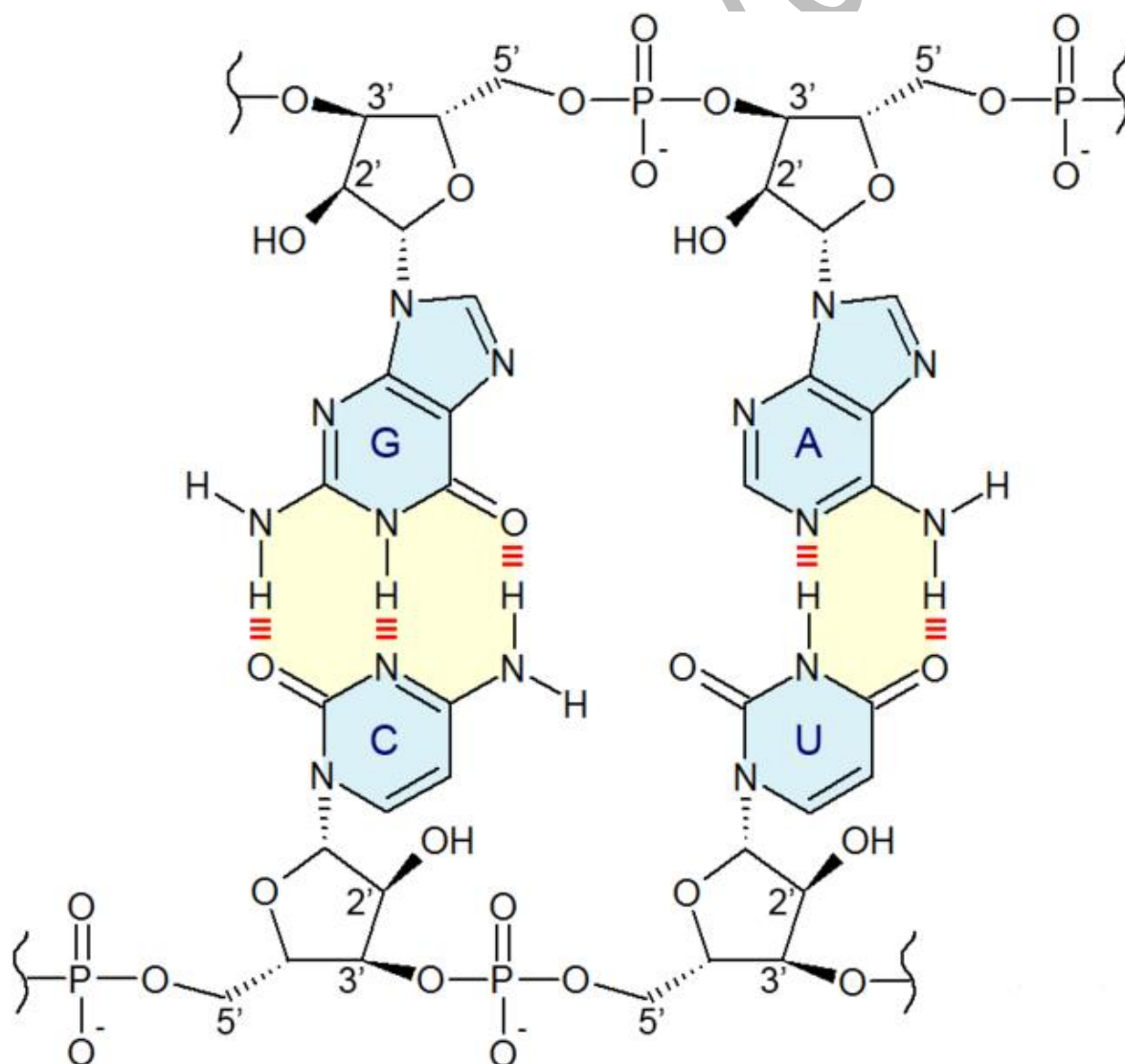


Thymine

A-T δεσμός στο DNA

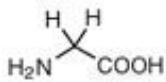


C-G & A-U δεσμοί στο RNA

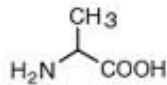


Χημικοί τύποι Αμινοξέων

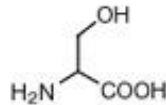
Small



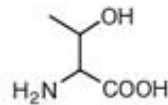
Glycine (Gly, G)
MW: 57.05



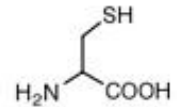
Alanine (Ala, A)
MW: 71.09



Serine (Ser, S)
MW: 87.08, pK_a ~ 16

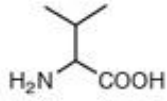


Threonine (Thr, T)
MW: 101.11, pK_a ~ 16

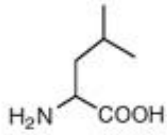


Cysteine (Cys, C)
MW: 103.15, pK_a = 8.35

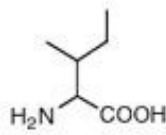
Hydrophobic



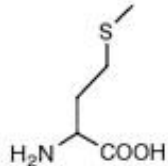
Valine (Val, V)
MW: 99.14



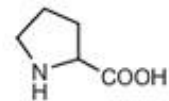
Leucine (Leu, L)
MW: 113.16



Isoleucine (Ile, I)
MW: 113.16

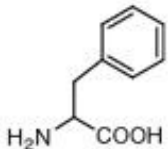


Methionine (Met, M)
MW: 131.19

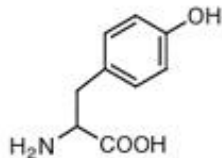


Proline (Pro, P)
MW: 97.12

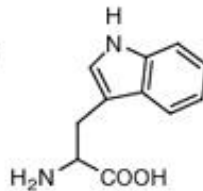
Aromatic



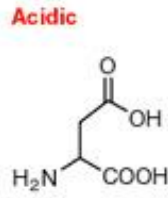
Phenylalanine (Phe, F)
MW: 147.18



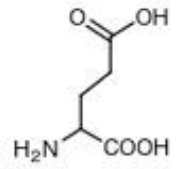
Tyrosine (Tyr, Y)
MW: 163.18



Tryptophan (Trp, W)
MW: 186.21

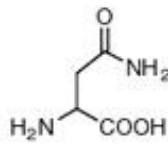


Aspartic Acid (Asp, D)
MW: 115.09, pK_a = 3.9

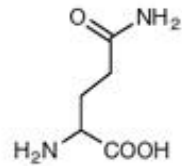


Glutamic Acid (Glu, E)
MW: 129.12, pK_a = 4.07

Amide



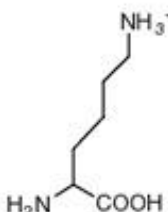
Asparagine (Asn, N)
MW: 114.11



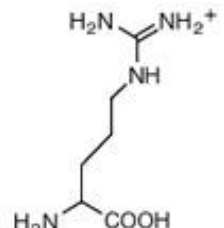
Glutamine (Gln, Q)
MW: 128.14



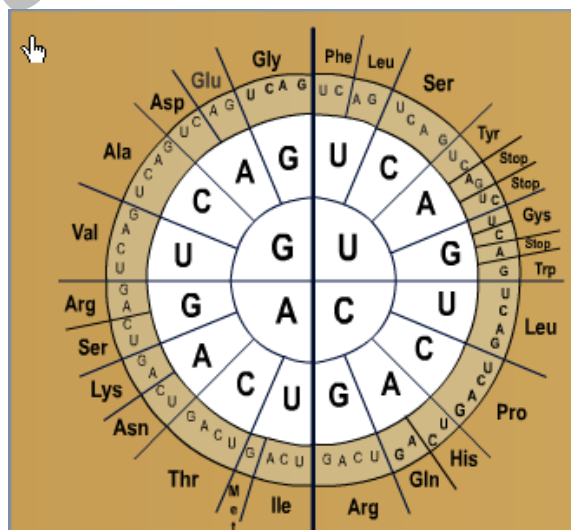
Histidine (His, H)
MW: 137.14, pK_a = 6.04



Lysine (Lys, K)
MW: 128.17, pK_a = 10.79



Arginine (Arg, R)
MW: 156.19, pK_a = 12.48



[Πηγή: Wikipedia, διδακτικό πακέτο Βιολογίας Γυμνασίου]