



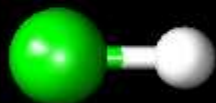
UNIVERSITÀ
DEGLI STUDI DI TRIESTE

Fabio Benedetti

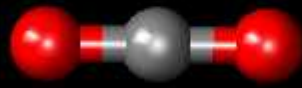
Dipartimento di Scienze Chimiche e Farmaceutiche

*La forma delle molecole:
estetica, complessità, funzione.....e gusto*

Alcune semplici molecole



HCl



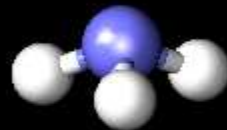
CO₂



H₂O



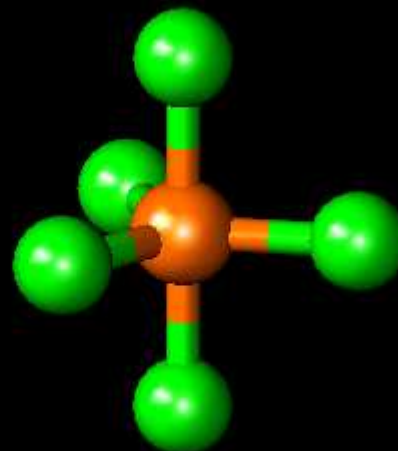
BH₃



NH₃



CH₄



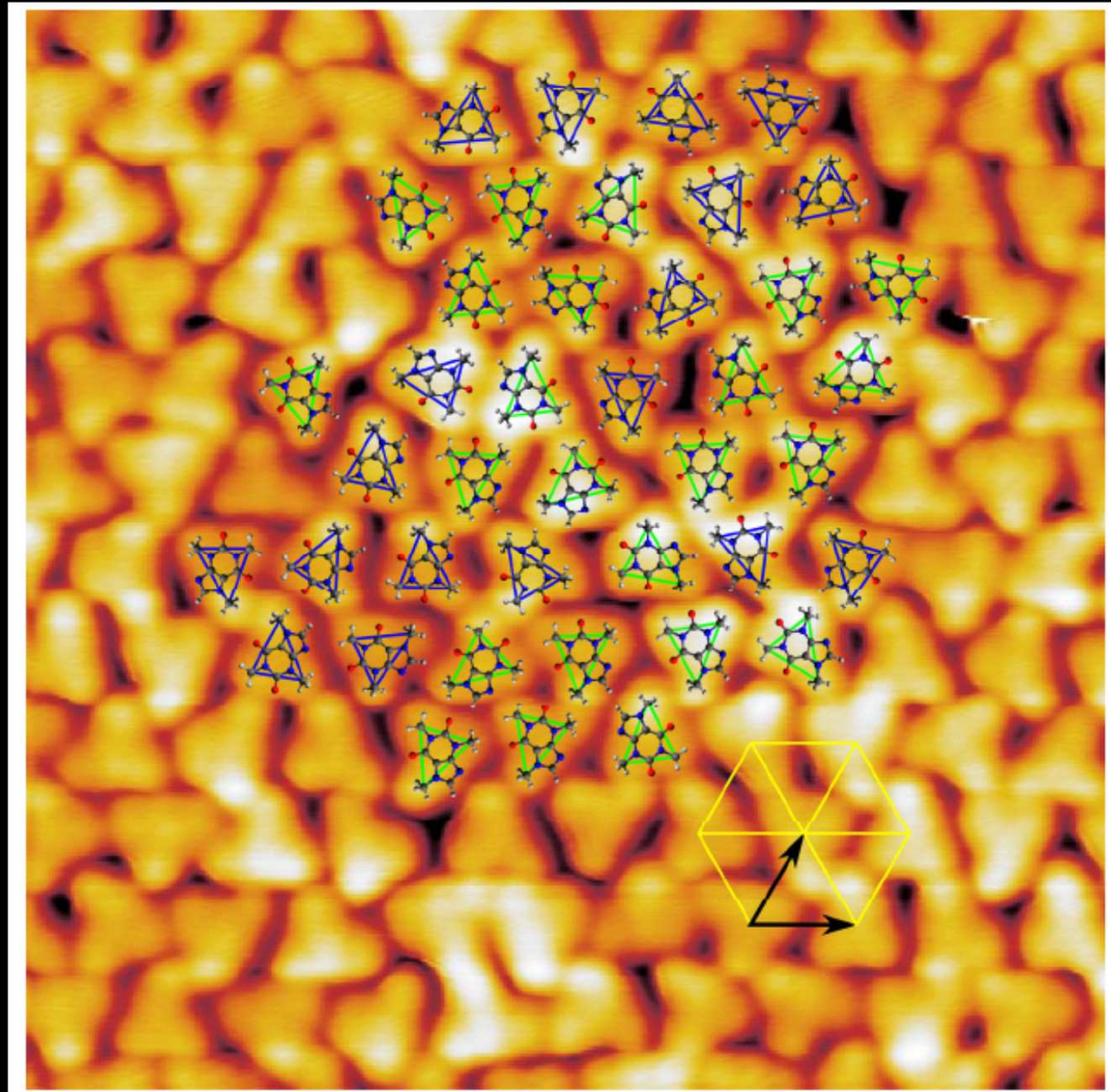
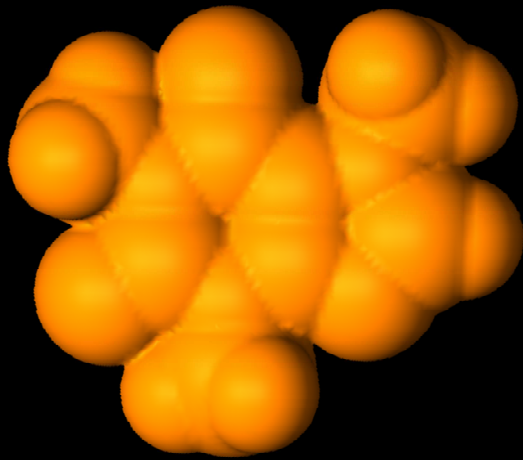
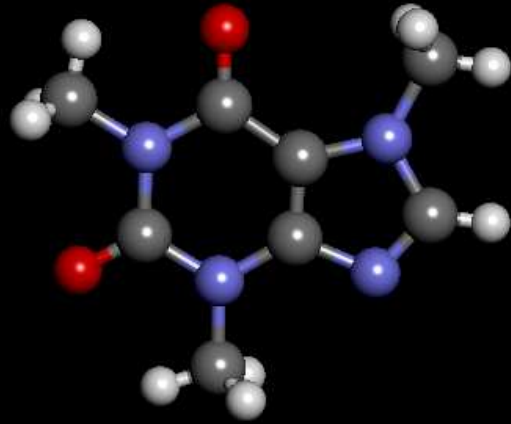
PCl₃



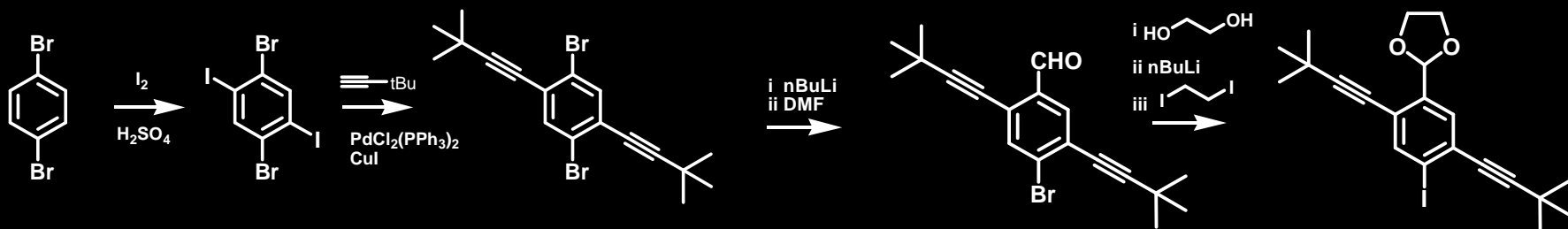
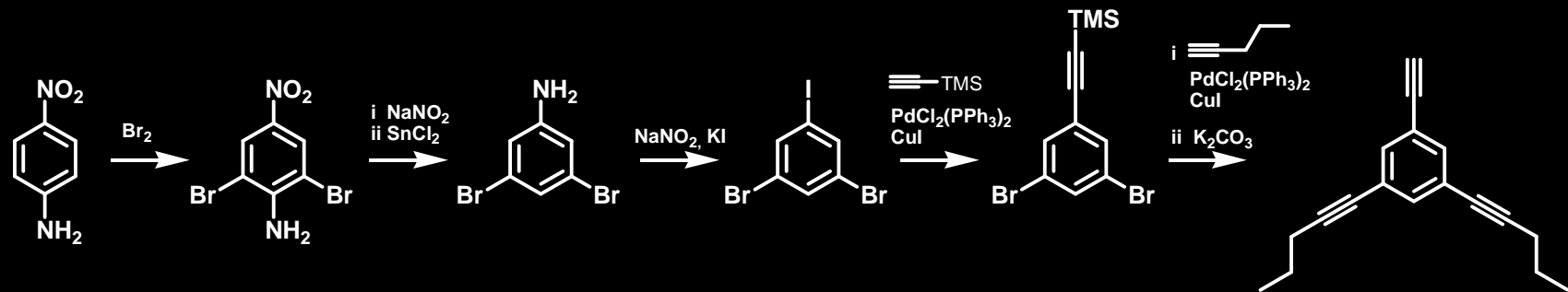
PF₆²⁻



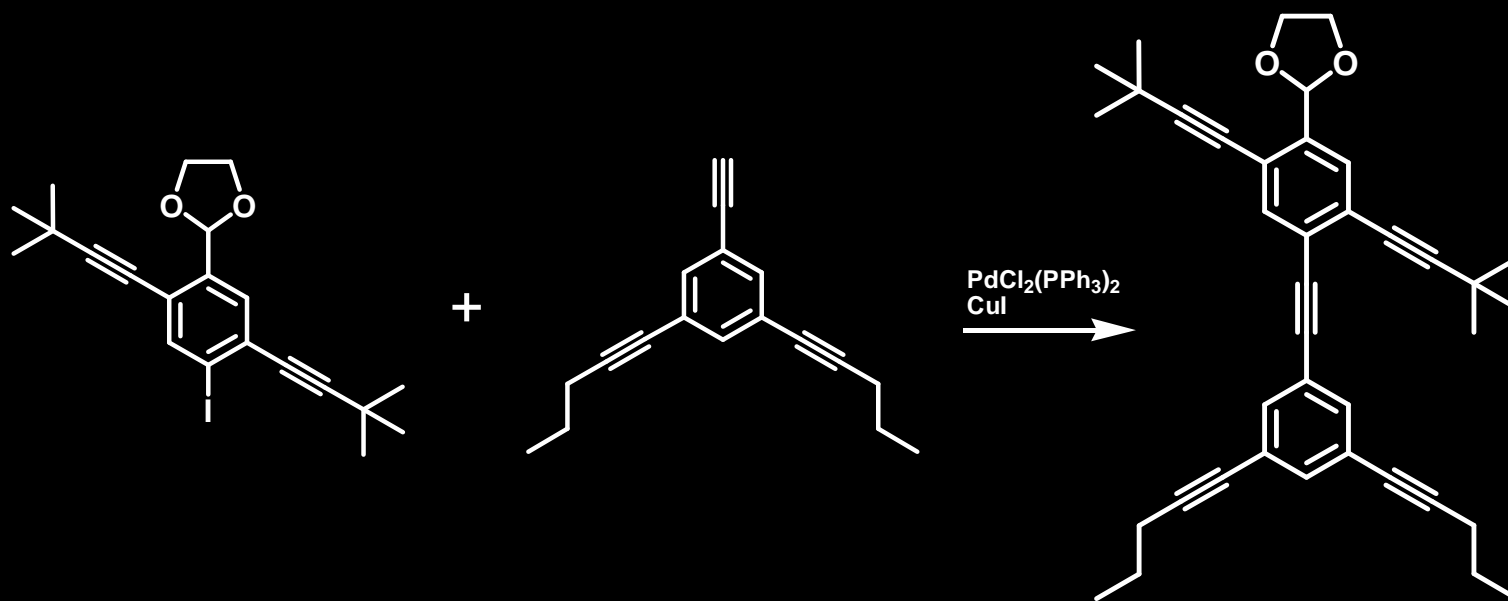
Caffeina



La sintesi chimica dal semplice al complesso

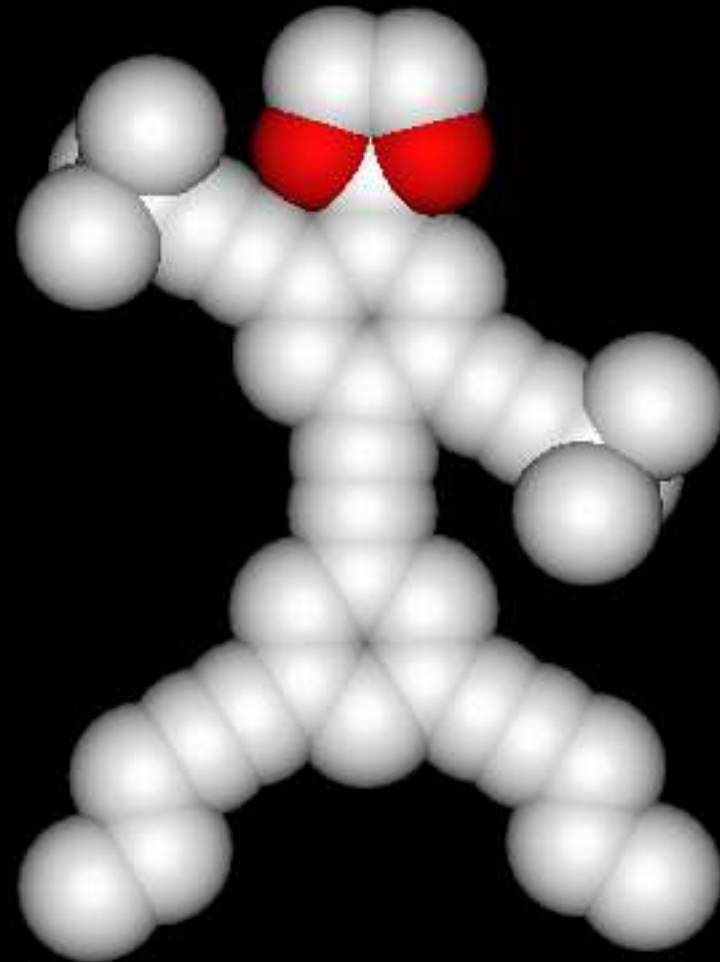


La sintesi chimica: una molecola antropomorfa



Nano Kid

1.84 nm
(0.00000000184 m)



Riconoscimento molecolare

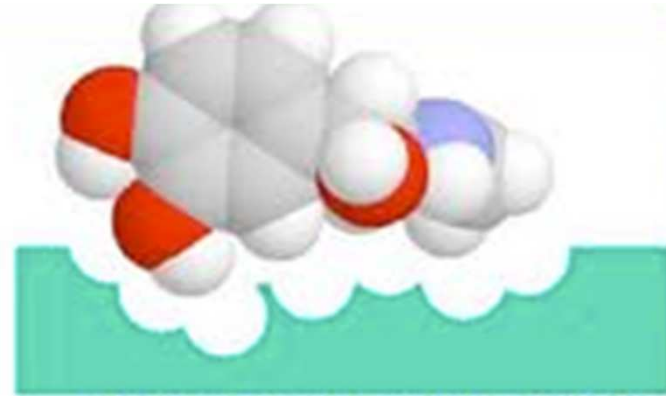


Emil Fischer 1852-1919

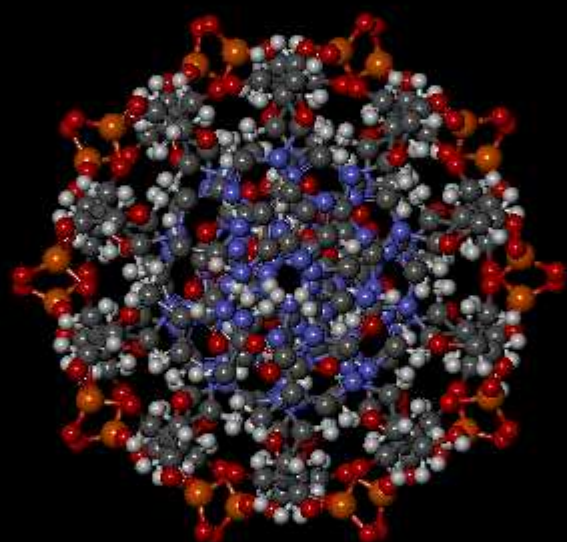
Premio Nobel 1902



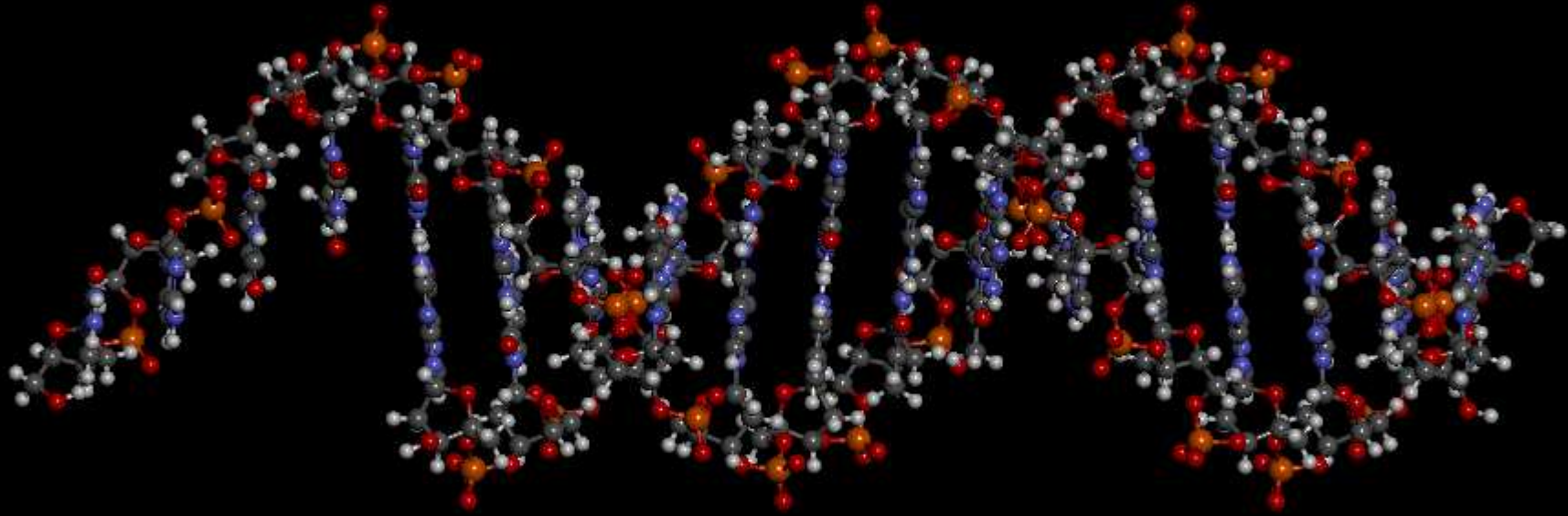
chiave e serratura



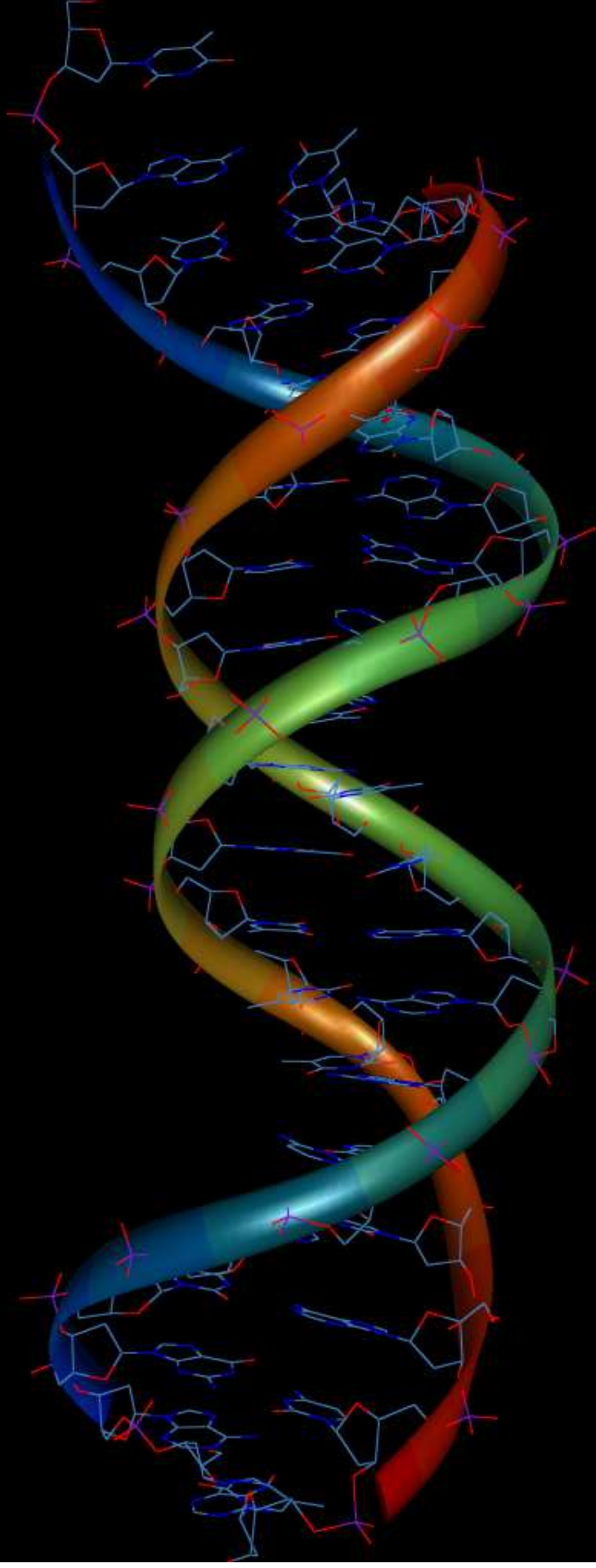
ligando e recettore



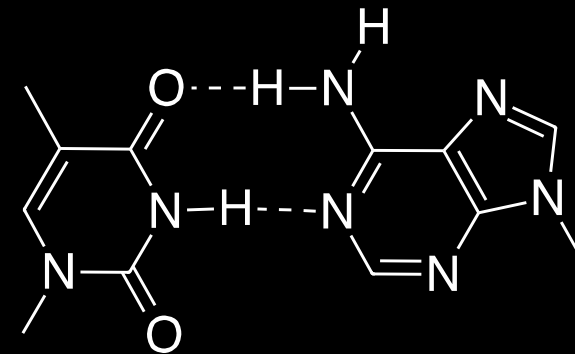
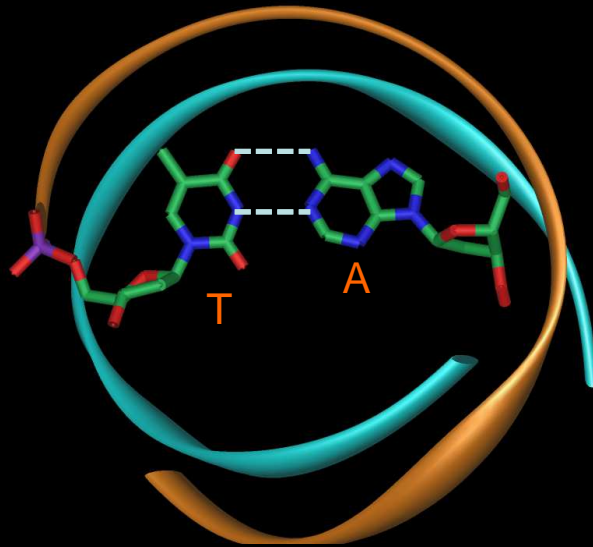
DNA



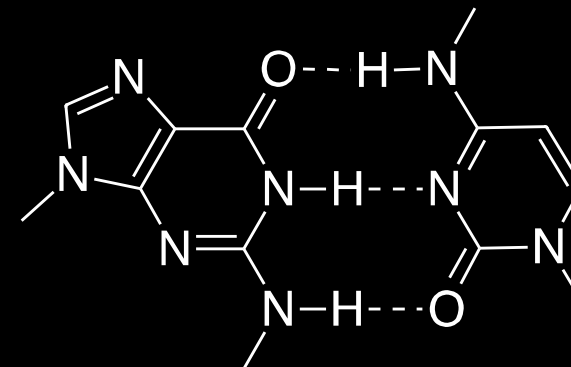
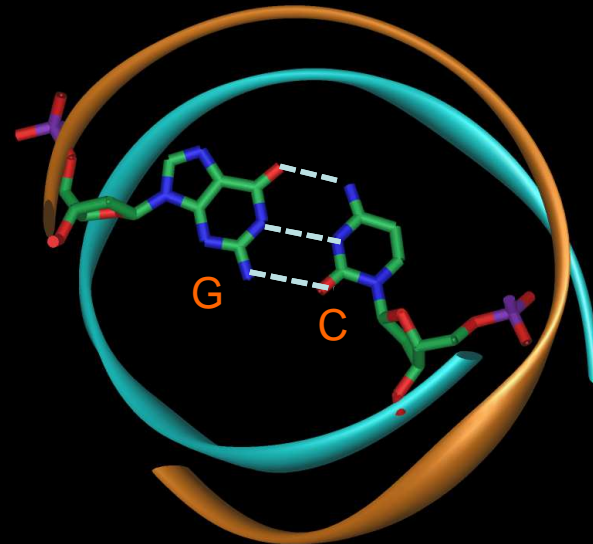
Riconoscimento Molecolare



Riconoscimento tra coppie di basi nel DNA



Thymine.....Adenine



Guanine.....Cytosine

Il gusto



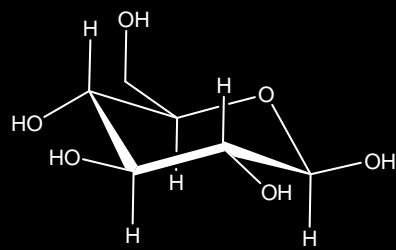
Il gusto



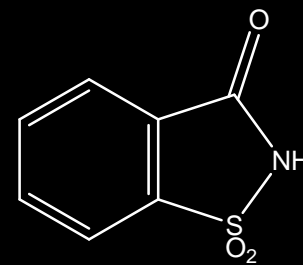
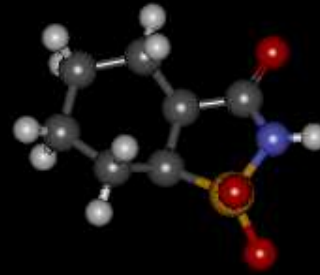
5 sapori: dolce
amaro
salato
acido
umami



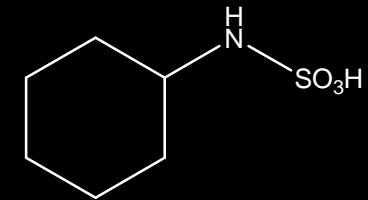
Dolce



glucosio

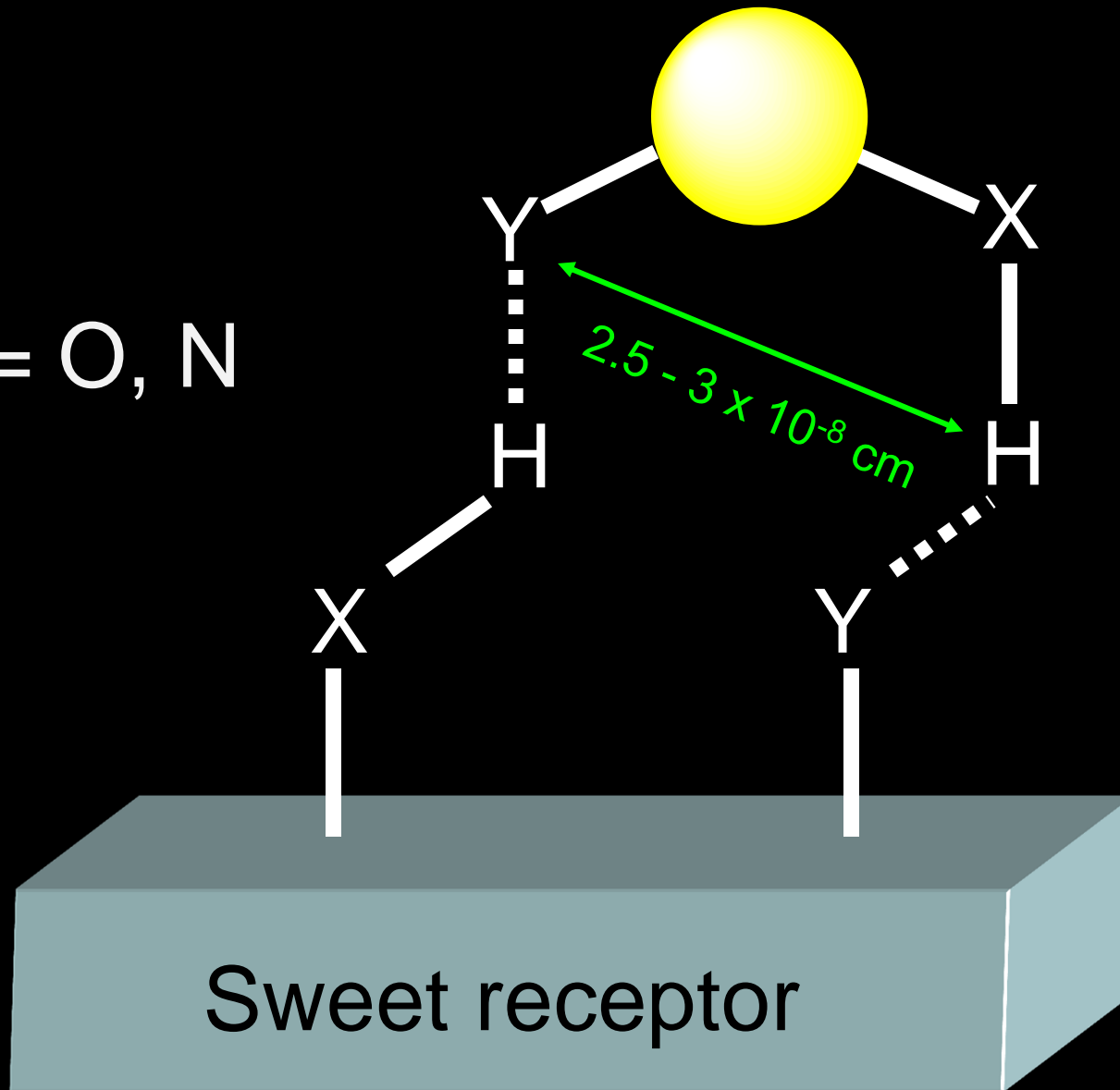


saccarina



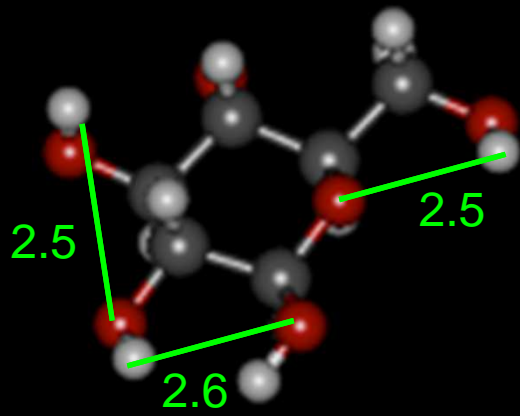
ciclammato

X, Y = O, N

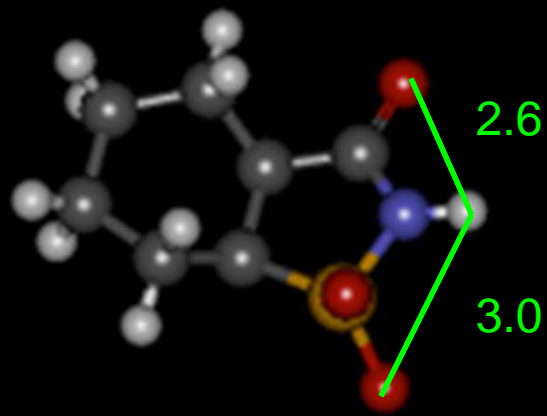


Sweet receptor

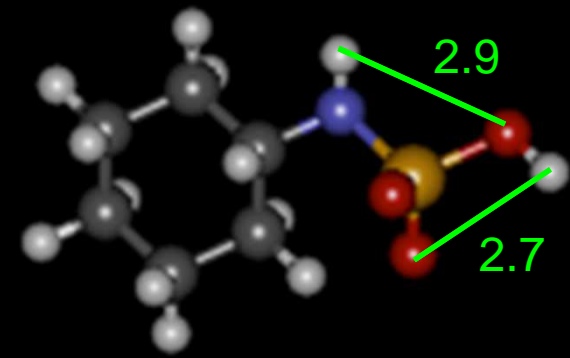
Dolce



glucosio

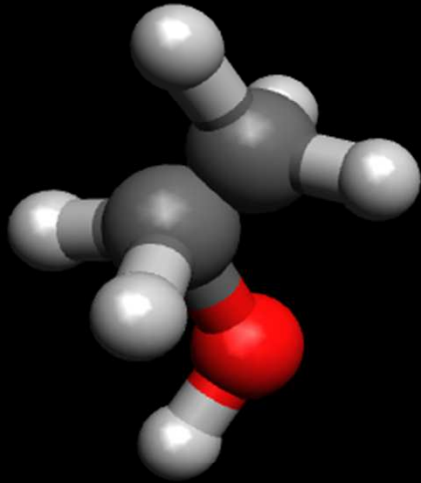


saccarina

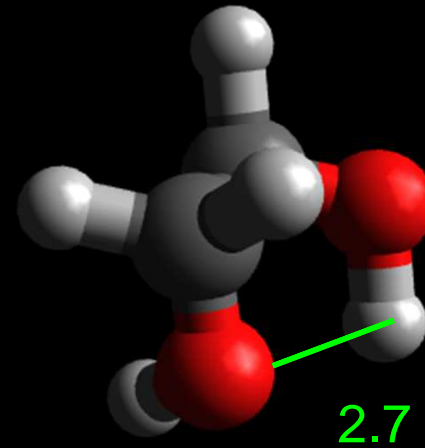


ciclammato

Dolce



Etanolo
non dolce



Glicole etilenico
dolce



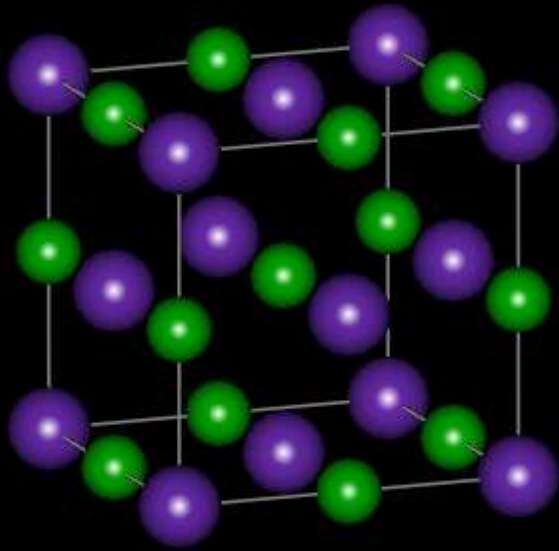


Salato

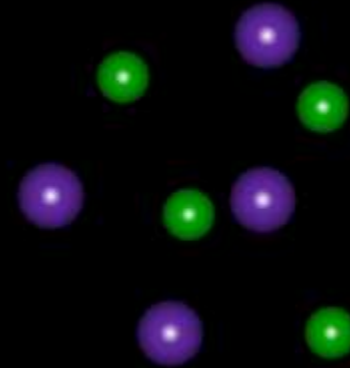
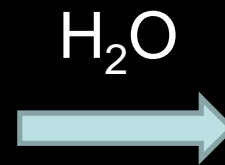


Acido

Salato

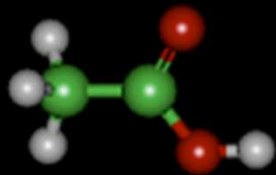
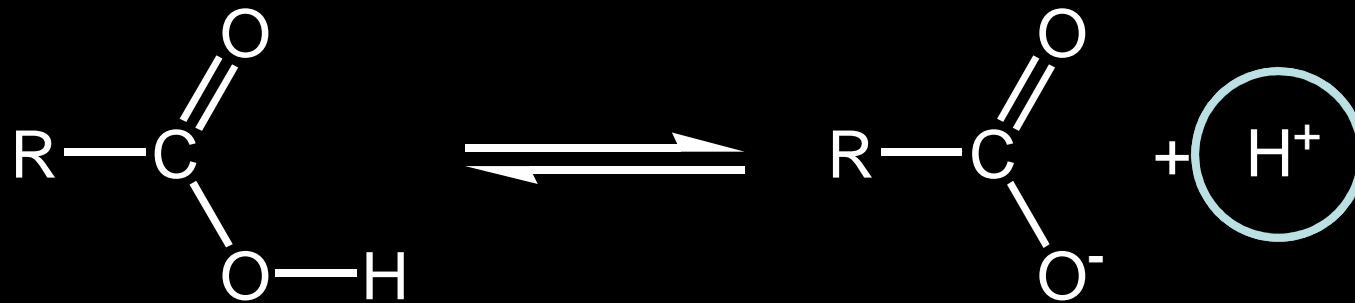


Solido ionico NaCl

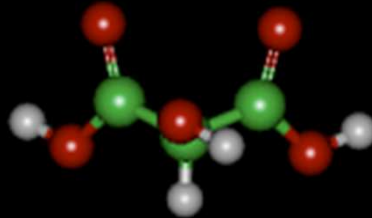


Ioni
Na⁺, Cl⁻

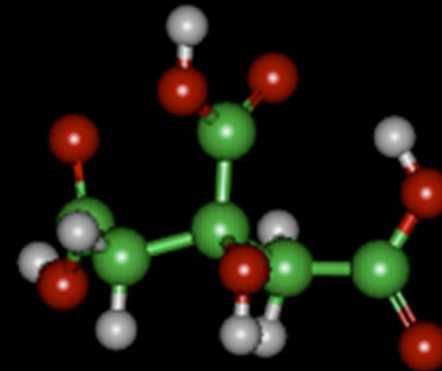
Acido



Acido acetico
(aceto)

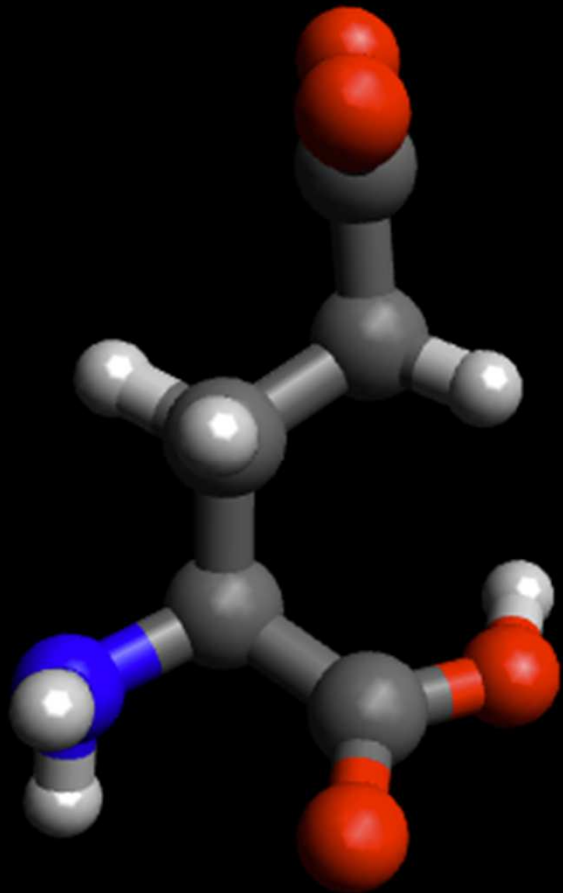


Acido malico
(mele)



Acido citrico
(agrumi)

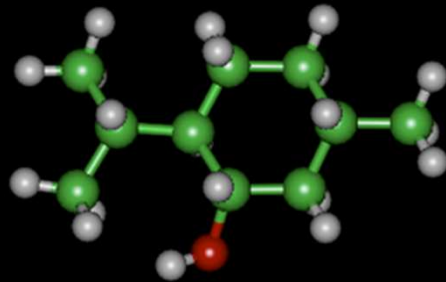
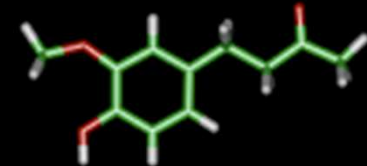
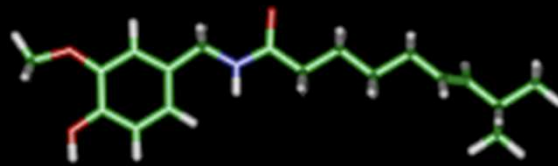
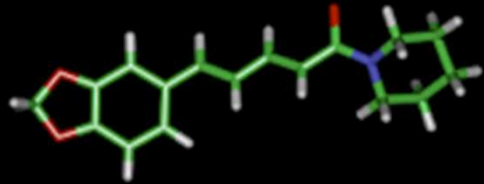
Umami



Acido glutammico



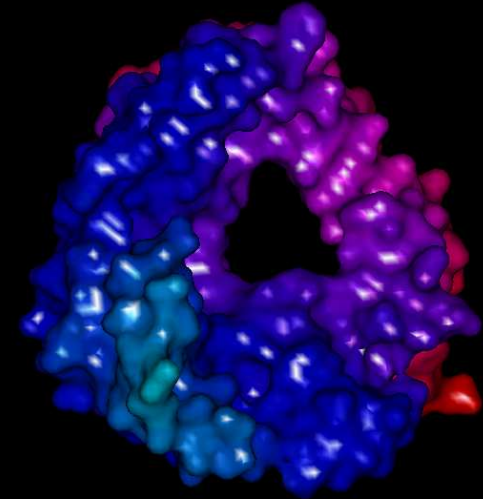
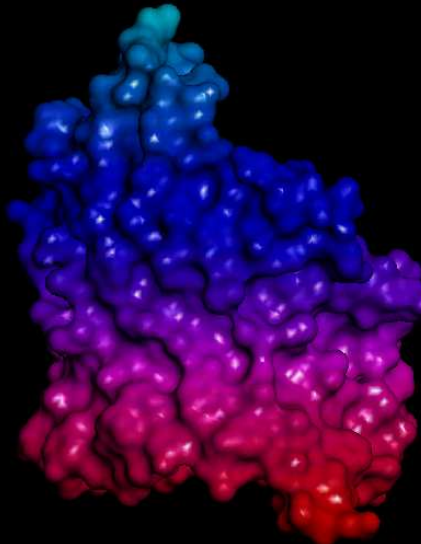
Fresco e Piccante (Hot)



Porine: quale funzione ?



porina



Peter Agre
Premio Nobel per la
Chimica 2003

