

Nucleic Acids

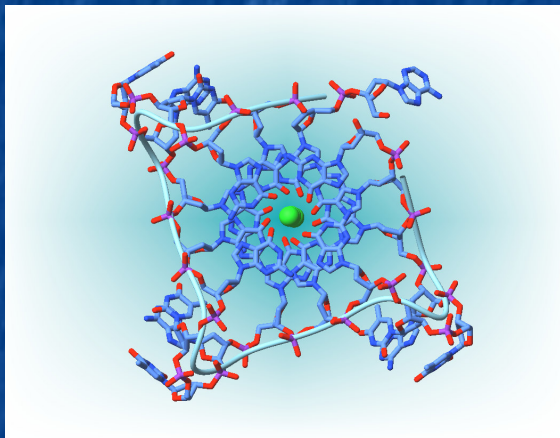
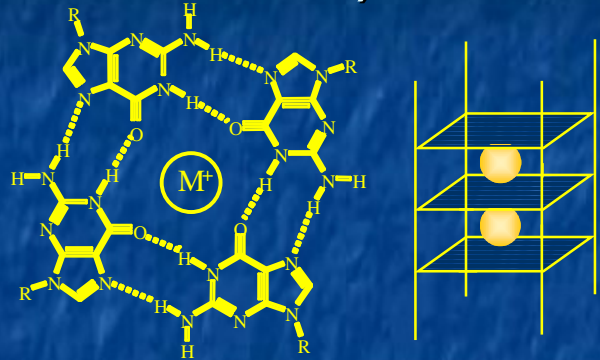
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BSS

Biological
and Soft
Systems

DNA forms complex structures

- The double helix is not all there is!
- Other structural forms are important for regulating gene activity
- Particular guanine-rich sequences can form four-stranded structures

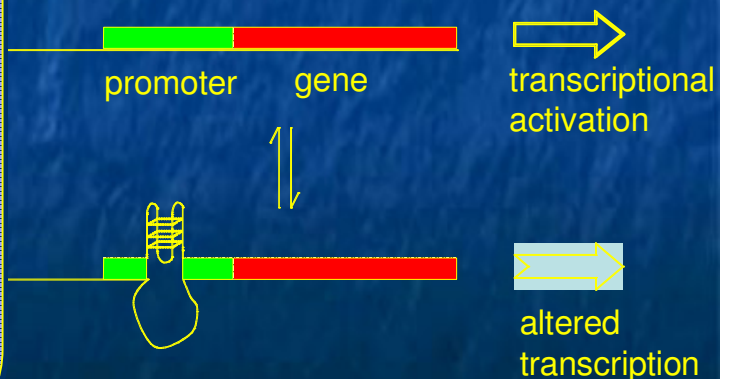


G-quadruplexes

- These structures can be studied biophysically, using UV and CD spectroscopy as well as fluorescence techniques like FRET
- We can then use bioinformatics to predict where they form in the human genome, and hence their function

Quadruplex functions

- Quadruplexes can control gene transcription and translation - especially in cancers
- We're testing quadruplex-binding ligands to develop specific drugs
- Evolutionary studies tell us about the history of these structures



www.quadruplex.org

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