Drug targets are biological macromolecules

- Most are proteins, including
  - Enzymes - catalysts that speed up a chemical reaction
  - Receptors - take a signal and pass it along
    - G protein coupled receptors - pass information across a cell membrane
    - Transcription factors - signal to print out instructions to make a certain protein
  - Membrane transporters - transport molecules across a membrane
  - Ion channels - allow ions to pass through a membrane

- Others include
  - Deoxyribonucleic acid (DNA)
    - stores genetic information
    - cancer drug target
  - The ribosome
    - makes proteins
    - common antibiotic drug target

see Landry, Y.; Gies, J.-P. Drugs and Their Molecular Targets: An Updated Overview. *Fundam Clin Pharmacol* **2008**, *22* (1), 1–18. https://doi.org/10.1111/j.1472-8206.2007.00548.x.

also see Therapeutic Target Database: http://idrblab.net/ttd/

Discuss: how can modulating these functions treat disease?

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Biological macromolecules are heteropolymers