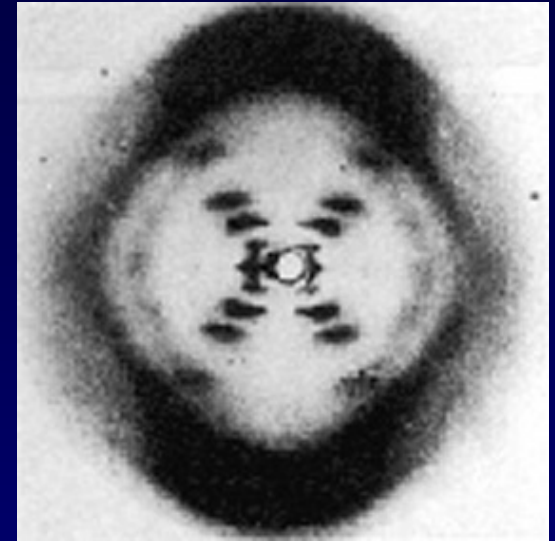


FYI: Application: Structure of DNA

How do we know the structures of DNA, proteins and other biological molecules? X-ray diffraction!

The molecules are crystallized to create a crystal in which the molecules are arranged in a periodic lattice. By using the sharp Bragg diffraction from many molecules, the structure of each molecule is determined - the positions of thousands of atoms.

The original diffraction image of DNA taken by Rosalind Franklin in 1953



See figure and more details on this and other X-ray scattering in the text, sec. 36.6

X-rays remain the primary methods for establishing the atomic scale structures of complex molecules.

Example: Rabbit liver carboxylesterase (one molecule showing atomic groups and attached large scale structures with atoms not shown).

Source: St. Jude Children Research Hospital
http://www.stjude.org/faculty/0,2512,407_2030_4278,00.html

