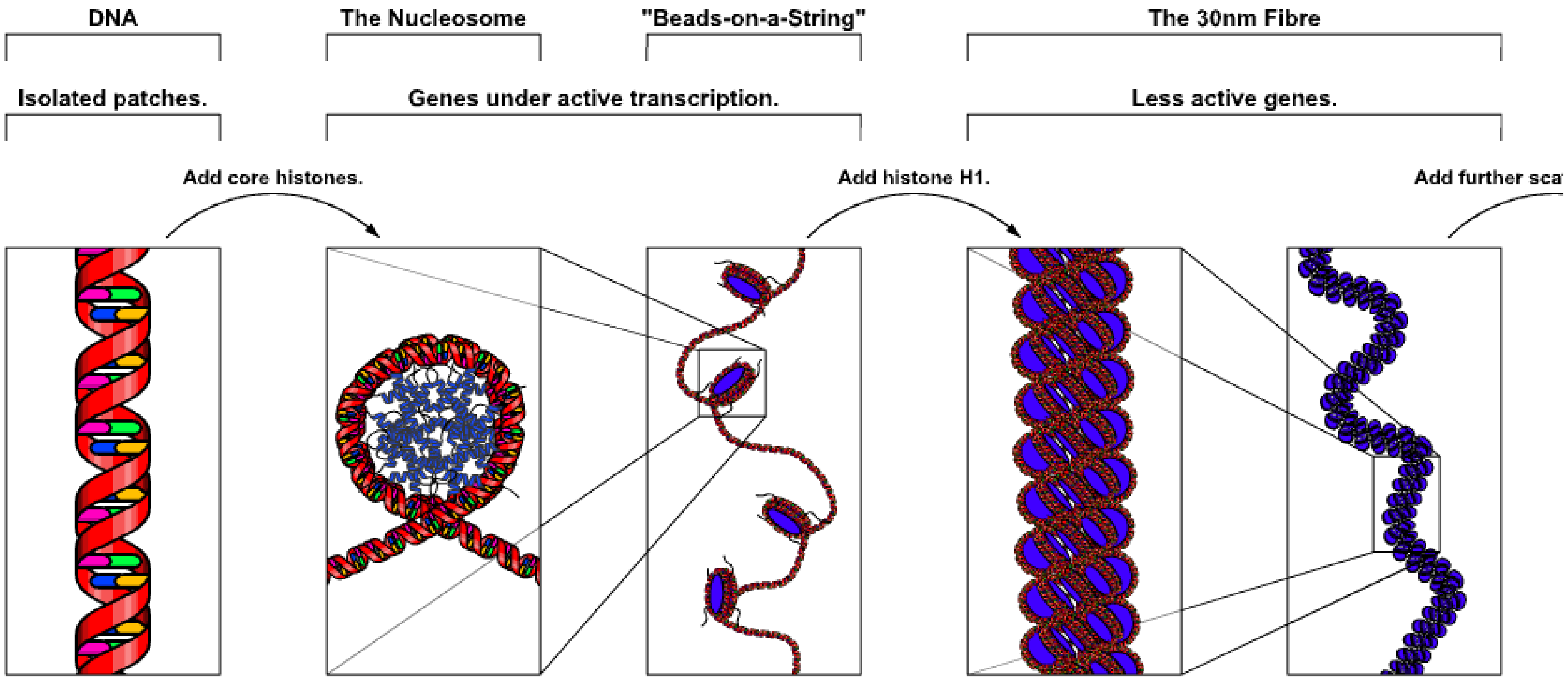

http://en.wikipedia.org/wiki/Chromosome

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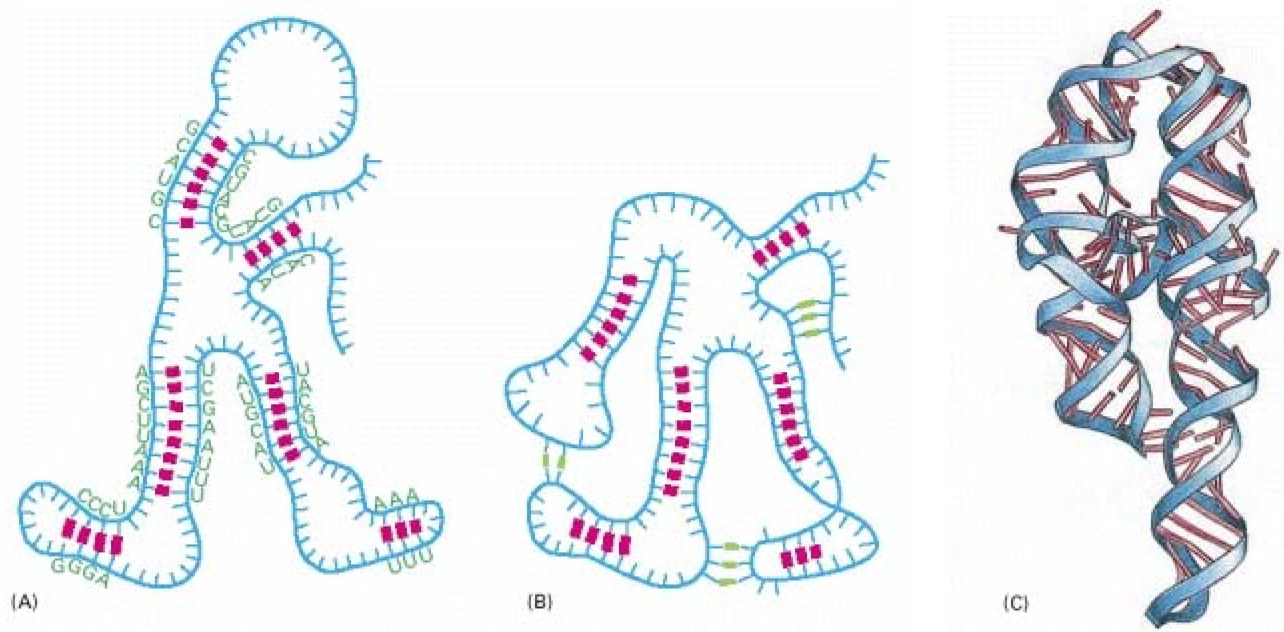

Figure 6-6

RNA can fold into specific structures

RNA is largely single-stranded, but it often contains short stretches of nucleotides that can form conventional base-pairs with complementary sequences found elsewhere on the same molecule. These interactions, along with additional “nonconventional” base-pair interactions, allow an RNA molecule to fold into a three-dimensional structure that is determined by its sequence of nucleotides. (A) Diagram of a folded RNA structure showing only conventional base-pair interactions; (B) structure with both conventional *(red)* and nonconventional *(green)* base-pair interactions; (C) structure of an actual RNA, a portion of a group 1 intron (see Figure 6-36). Each conventional base-pair interaction is indicated by a “rung” in the double helix. Bases in other configurations are indicated by broken rungs.

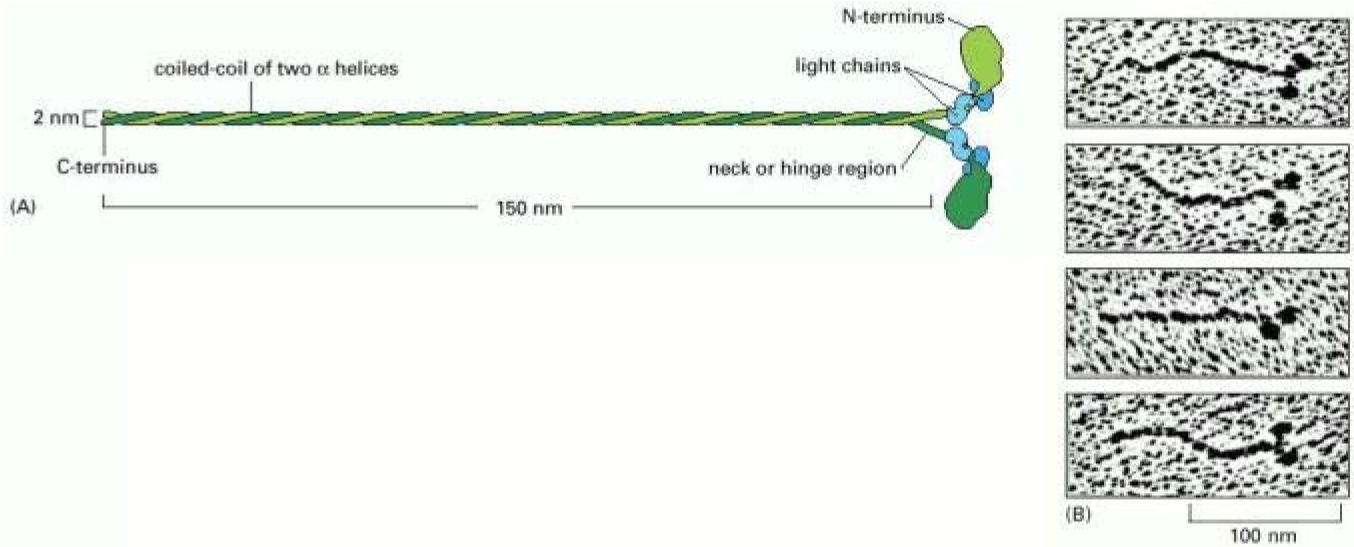

Figure 16-51Myosin II

(A) A myosin II molecule is composed of two heavy chains (each about 2000 amino acids long *(green)* and four light chains *(blue).* The light chains are of two distinct types, and one copy of each type is present on each myosin head. Dimerization occurs when the two α helices of the heavy chains wrap around each other to form a coiled-coil, driven by the association of regularly spaced hydrophobic amino acids (see Figure 3-11). The coiled-coil arrangement makes an extended rod in solution, and this part of the molecule is called the tail. (B) The two globular heads and the tail can be clearly seen in electron micrographs of myosin molecules shadowed with platinum. (B, courtesy of David Shotton.)

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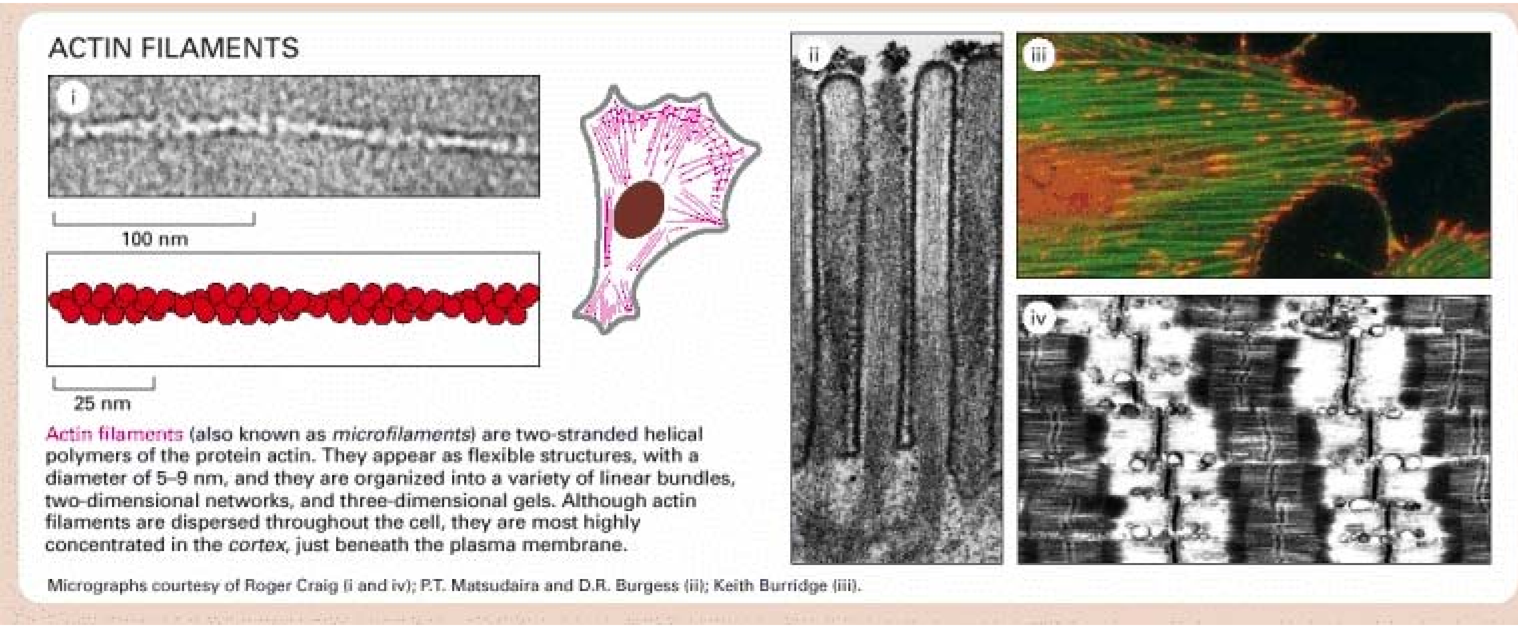

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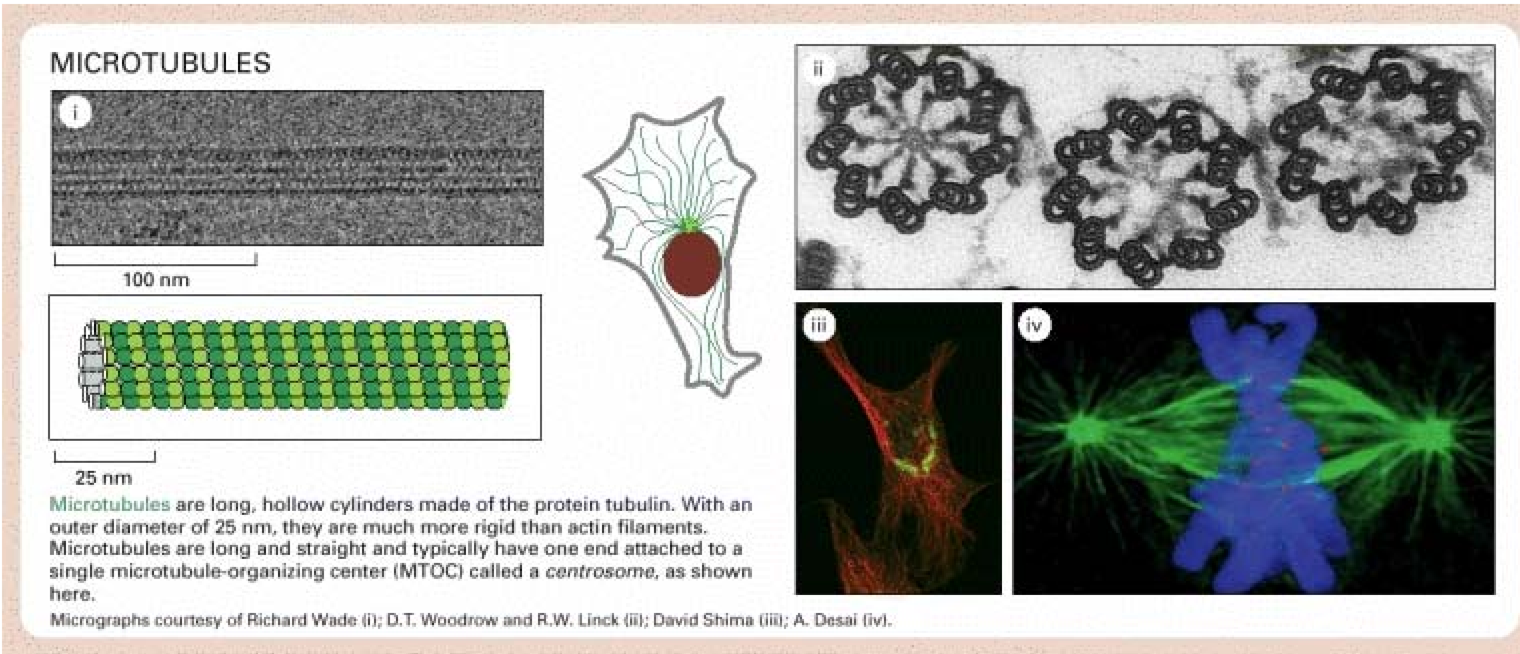

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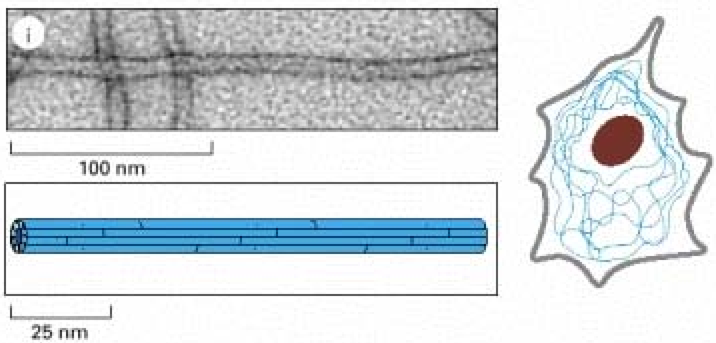
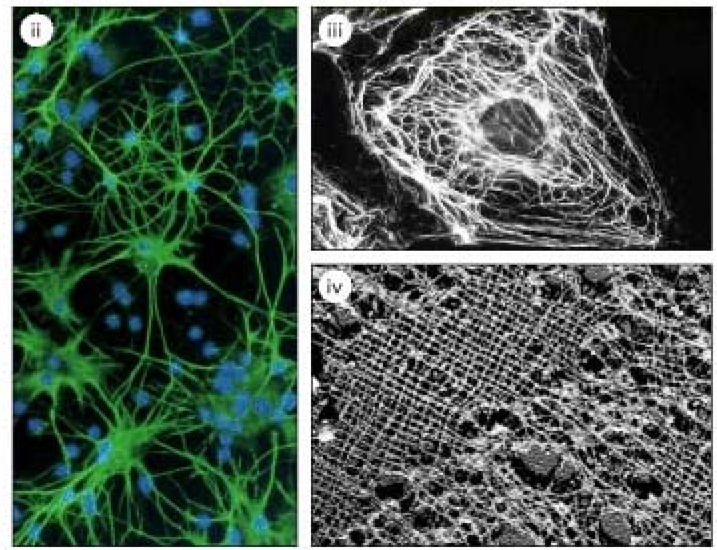
INTERMEDIATE FILAMENTS





Intermediate filaments are ropelike fibers with a diameter of around 10 nm; they are made of intermediate filament proteins, which constitute a large and heterogeneous family. One type of intermediate filament forms a meshwork called the nuclear lamina just beneath the inner nuclear membrane. Other types extend across the cytoplasm, giving cells mechanical strength. In an epithelial tissue, they span the cytoplasm from one cell-cell junction to another, thereby strengthening the entire epithelium.

Micrographs courtesy of Roy Quinlan (i); Nancy L. Kedersha (ii); Mary Osborn (iii); Ueli Aebi (iv).

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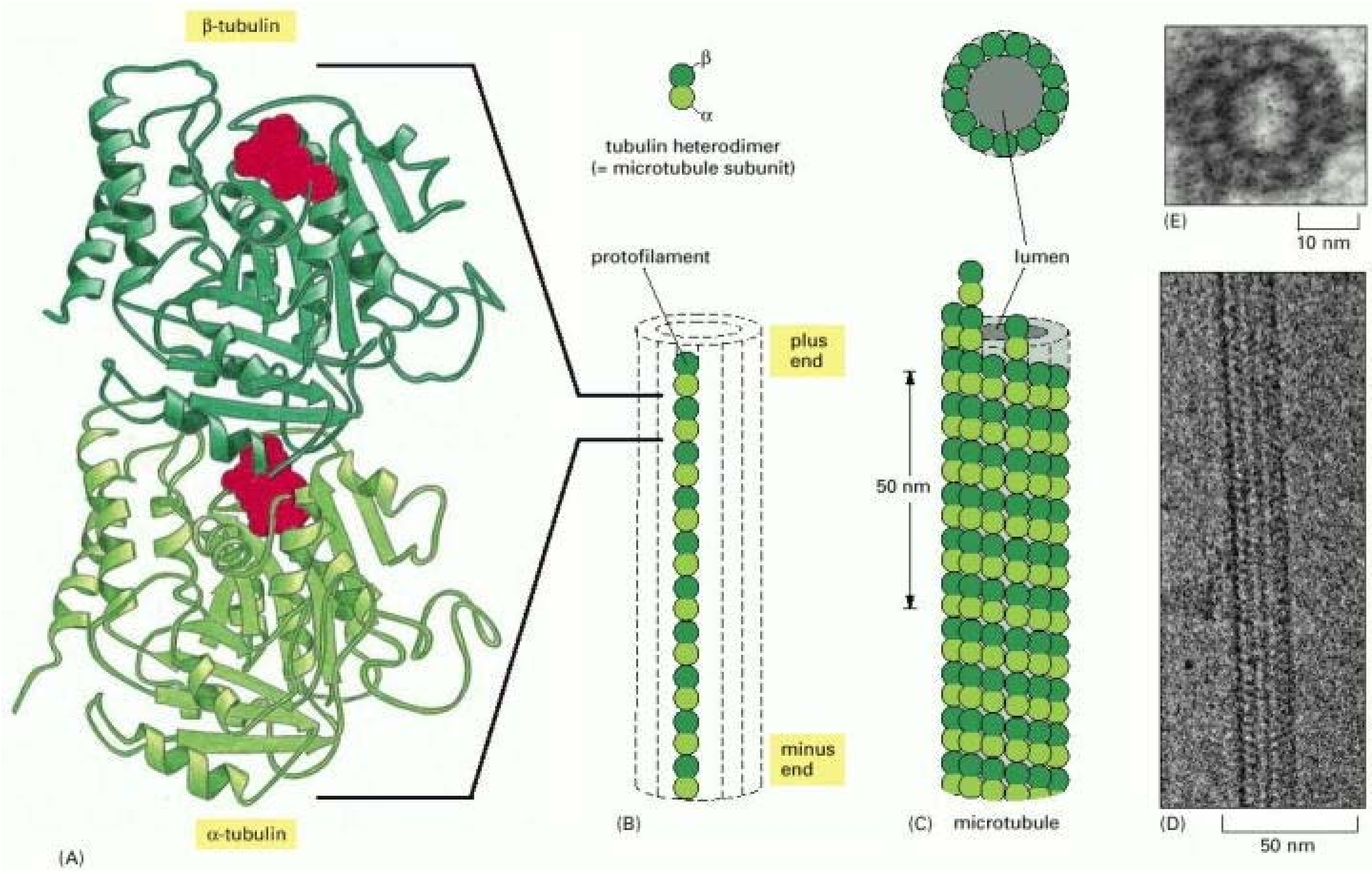

Figure 16-6The structure of a microtubule and its subunit

(A) The subunit of each protofilament is a tubulin heterodimer, formed from a very tightly linked pair of α- and β-tubulin monomers. The GTP molecule in the α-tubulin monomer is so tightly bound that it can be considered an integral part of the protein. The GTP molecule in the β-tubulin monomer, however, is less tightly bound and has an important role in filament dynamics. Both nucleotides are shown in *red*. (B) One tubulin subunit (α-β heterodimer) and one protofilament are shown schematically. Each protofilament consists of many adjacent subunits with the same orientation. (C) The microtubule is a stiff hollow tube formed from 13 protofilaments aligned in parallel. (D) A short segment of a microtubule viewed in an electron microscope. (E) Electron micrograph of a cross section of a microtubule showing a ring of 13 distinct protofilaments. (D, courtesy of Richard Wade; E, courtesy of Richard Linck.)

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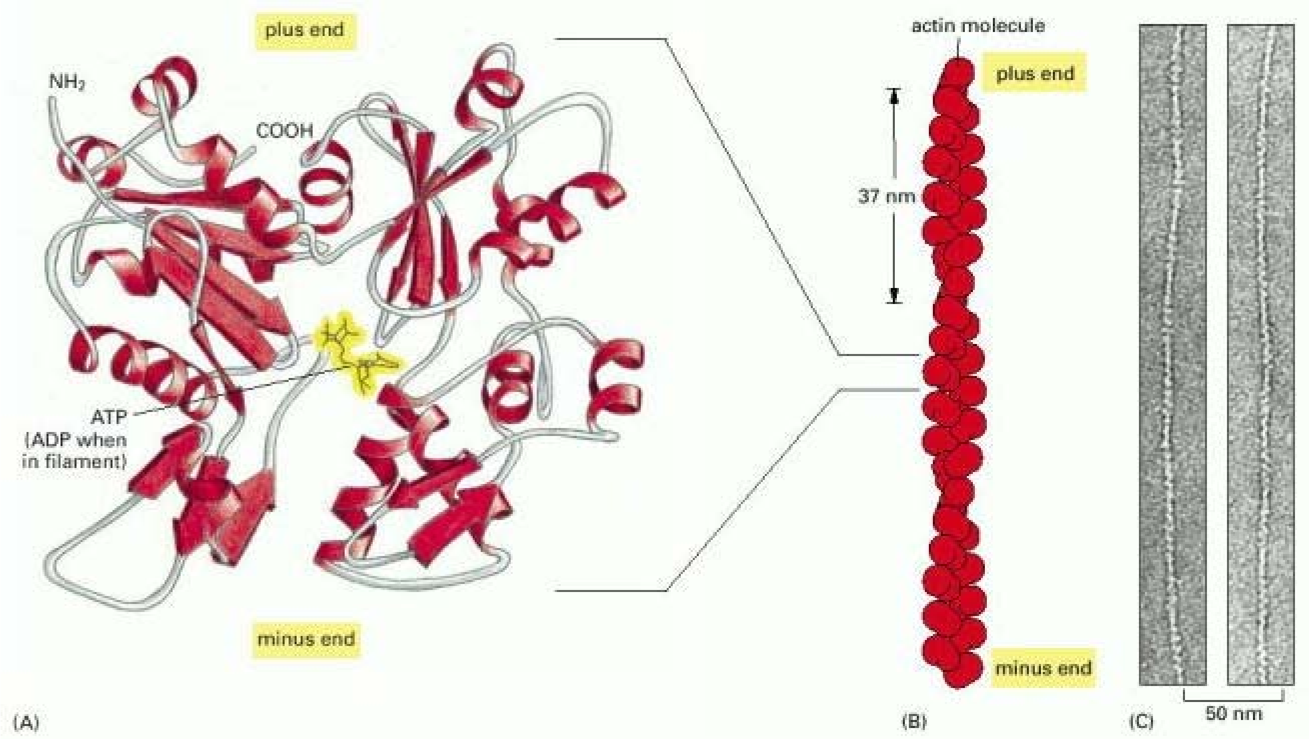

Figure 16-7The structures of an actin monomer and actin filament

(A) The actin monomer has a nucleotide (either ATP or ADP) bound in a deep cleft in the center of the molecule. (B) Arrangement of monomers in a filament. Although the filament is often described as a single helix of monomers, it can also be thought of as consisting of two protofilaments, held together by lateral contacts, which wind around each other as two parallel strands of a helix, with a twist repeating every 37 nm. All the subunits within the filament have the same orientation. (C) Electron micrographs of negatively stained actin filaments. (C, courtesy of Roger Craig.)

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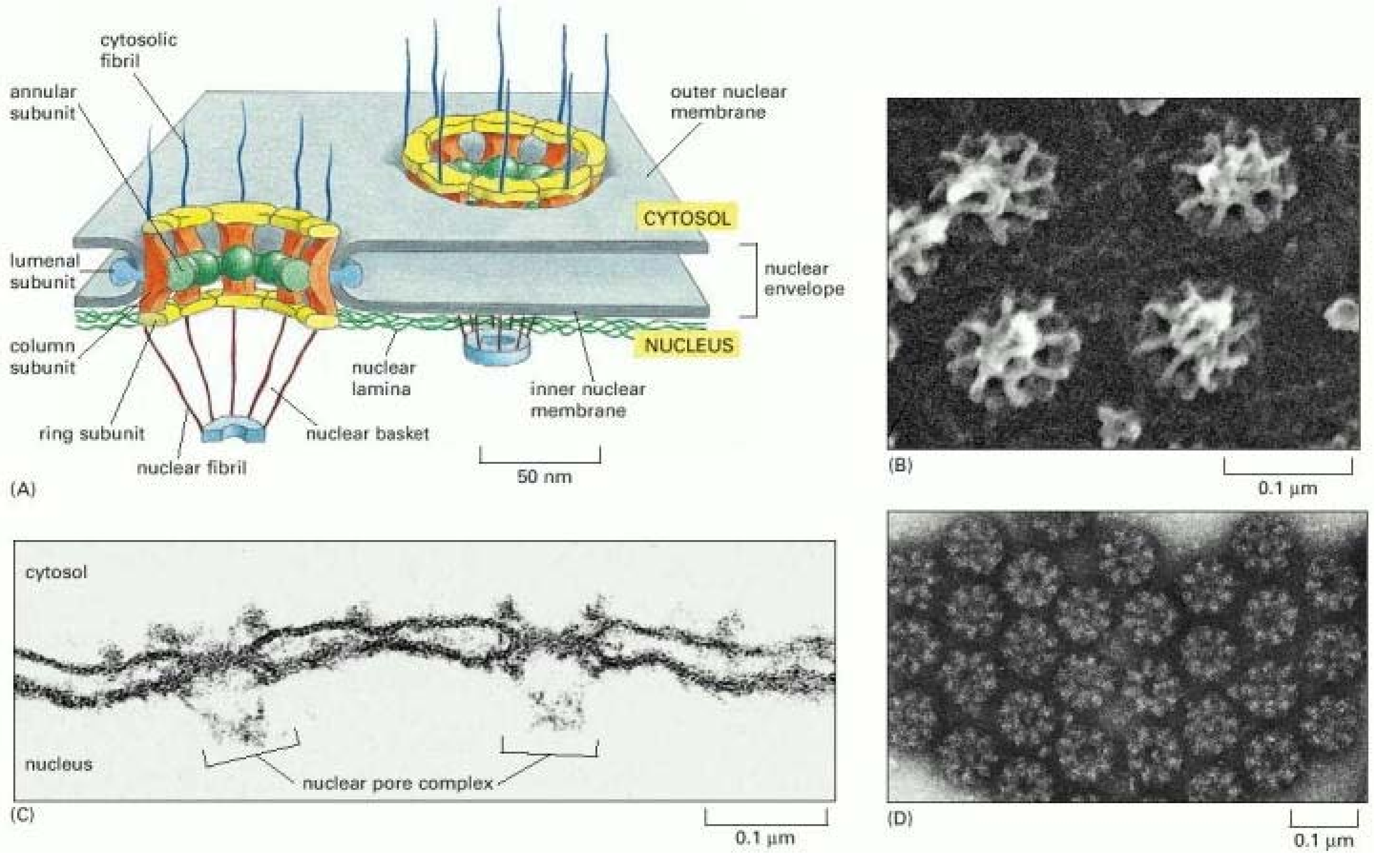
Figure 12-10
The arrangement of nuclear pore complexes in the nuclear envelope



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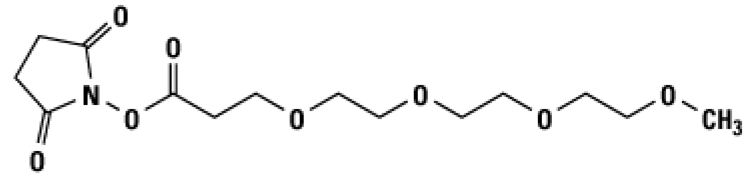
Polyethylene glycol

MS(PEG)$_n$

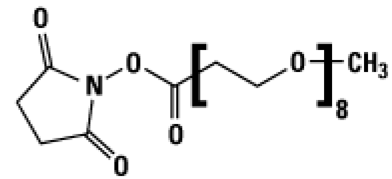
Methyl-PEG$_n$-NHS

Succinimidyl-([*N*-methyl]-#ethyleneglycol) ester

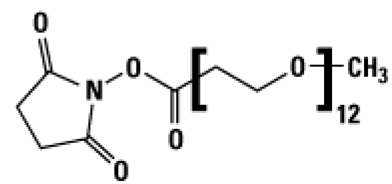


MS(PEG)$_4$
M.W. 333.33
Spacer Arm 16.4 Å

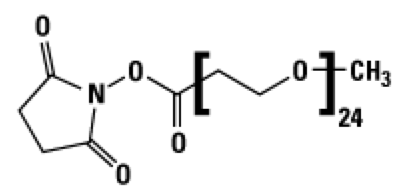
MS(PEG)$_8$
M.W. 509.54
Spacer Arm 30.8 Å



MS(PEG)$_{12}$
M.W. 685.75
Spacer Arm 44.9 Å



MS(PEG)$_{24}$
M.W. 1214.39
Spacer Arm 88.2 Å



http://www.piercenet.com/browse.cfm?fldID=20CD10B3-1F10-4A87-B765-97DAB2FB6681