

TABLE 8.2. Schematic summary of various models for the origin of the nucleus

Schematic Model	Membrane That Nuclear Membrane Is Derived from and Is Homologous to	Compartment That the Nuclear Compartment Is Derived from and Is Homologous to
<p>A Gram-positive bacterium (actinobacterium)</p>  <p>Archaea</p> <p>Amitochondriate eukaryote</p>	Plasma membrane of a bacterium	Bacterial cytoplasm
<p>B Gram-positive bacterium</p>  <p>Endospore formation</p> <p>Amitochondriate eukaryote</p>	Plasma membrane of a bacterium	Bacterial endospore
<p>C Gram-negative bacterium</p>  <p>Endokaryosis</p> <p>Crenarchaeote</p> <p>Amitochondriate eukaryote</p>	Plasma membranes of a bacterium and an archaea	Archaeal cytoplasm
<p>D Archaeal (methanogens)</p>  <p>δ-proteobacterial fusion</p> <p>H_2-producing δ-proteobacteria</p> <p>Amitochondriate eukaryote</p>	Plasma membranes of several bacteria	Archaeal cytoplasm
<p>E Archaeal (methanogens)</p>  <p>δ-proteobacterial fusion</p> <p>H_2-producing δ-proteobacteria</p> <p>α-proteobacterial anaerobic methane oxidizer</p> <p>Mitochondria</p> <p>Mitochondriate eukaryote</p>	Plasma membranes of several bacteria	Archaeal cytoplasm
<p>F Archaeal (methanogens)</p>  <p>H_2-producing α-proteobacteria</p> <p>Archaeal host with mitochondrial symbiont</p> <p>Vesicle accumulation</p> <p>Facultative anaerobic mitochondriate eukaryote</p>	Vesicles of bacterial lipids synthesized in an archaea cytoplasm	Archaeal cytoplasm around the chromosome
<p>G <i>Thermoplasma</i></p>  <p>Spirochaete</p> <p>Amitochondriate eukaryote</p>	Plasma membranes of a bacterium and an archaea	Spirochaete cytoplasm
<p>H</p>  <p>Complex-enveloped DNA virus</p> <p>Methanoplasma-like methanogen</p> <p>Bacterial syntrophs Consortium</p> <p>Eukaryote (mitochondriate?)</p>	Viral coat	Viral lumen

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