

TABLE 5.5. Inferred molecular processes and gene families present in LUCA

Feature	Details	Associated Gene Families
Protein translation	Ribosomes made up of RNA and protein Charged tRNAs used	16S/18S rRNA 23S/28S rRNA 5S rRNA Many ribosomal proteins Elongation factor Tu Elongation factor G Multiple aminoacyl-tRNA synthetases
Transcription	At least a three-subunit DNA-dependent RNA polymerase	RpoA RpoB RpoC
DNA replication	DNA was the genetic material.	Pol1-type exonuclease DnaN (sliding clamp)
DNA recombination		RecA
Protein insertion in membranes		SecY FtsY

Data based in part on Harris J.K. et al. 2003. *Genome Res.* **13**: 407–412.
rRNA, ribosomal RNA; tRNA, transfer RNA.