

**TABLE 5.2.** Universal homologies of life

| Feature                                              | Trait                                                                                                         |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Core cellular features                               |                                                                                                               |
| Genetic material                                     | DNA                                                                                                           |
| Bases used in DNA                                    | A, C, T, G                                                                                                    |
| Bases used in RNA                                    | A, C, U, G                                                                                                    |
| Genetic code                                         | Three letter                                                                                                  |
| Cell envelope                                        | Lipoprotein membrane                                                                                          |
| Protein composition                                  | 20 core amino acids                                                                                           |
| Cellular complexes found in all organisms (examples) |                                                                                                               |
| Translation                                          | Small-subunit rRNA<br>Large-subunit rRNA<br>Multiple ribosomal proteins<br>Aminoacyl-tRNA synthetases<br>tRNA |
| Transcription                                        | RNA polymerase                                                                                                |
| Membrane transport systems                           | ABC transporters                                                                                              |

rRNA, ribosomal RNA; tRNA, transfer RNA; ABC, ATP-binding cassette.