



Scholars Research Library

Annals of Biological Research, 2021, 12 (S4): 019
(<http://scholarsresearchlibrary.com/archive.html>)



ISSN 0976-1233
CODEN (USA): ABRNBW

Classification of Eukaryotes Microorganisms

Luigi Cembalo*

Department of Molecular Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden

**Corresponding Author: Luigi Cembalo, Department of Molecular Sciences, Swedish University of Agricultural Sciences, Uppsala, Sweden, E-mail: Cembalo.luigi501@gmail.com*

DESCRIPTION

Eukaryotes are organisms with a nucleus contained inside a nuclear envelope in their cells. Eukaryotes are members of the Eukaryota or Eukarya domain, and their name derives from the Greek. Eukaryota is one of the three domains of life, with bacteria and *archaea* (the prokaryotes) making up the other two. Eukaryotes are now commonly thought to have originated in the *archaea* or to be a sister of the already-cultivated *archaea*. Eukaryotes make up a small percentage of all species, but their global biomass is estimated to be roughly equivalent to that of prokaryotes due to their usually greater size.

Other membrane-bound organelles present in eukaryotic cells include mitochondria and the Golgi apparatus, whereas chloroplasts are found in plants and algae. Primitive organelles may be found in prokaryotic cells. Eukaryotes can be unicellular or multicellular, and they contain a variety of cell types that create various forms of tissue; prokaryotes, on the other hand, are generally unicellular. The most well-known eukaryotes include animals, plants, and fungus; other eukaryotes are referred to as protists.

Eukaryotes have the ability to reproduce both asexually and sexually through mitosis and gamete fusion. One cell splits into two genetically identical cells during mitosis. DNA replication is followed by two rounds of cell division in meiosis, which results in four haploid daughter cells. These serve as gametes or sex cells. Because of genetic recombination during meiosis, each gamete has just one set of chromosomes, which are a unique mix of the matching pair of parental chromosomes.

As a result, the eukaryotes were divided into four kingdoms:

- Animalia kingdom
- Protista kingdom
- Plantae kingdom
- Fungi kingdom

The protists were thought to be “primitive forms,” and hence an evolutionary grade, because of their unicellular origin. The disentanglement of the deep divides in the tree of life only truly began with DNA sequencing, which led to Carl Woese proposing a concept of domains rather than kingdoms as the highest level rank, combining all the eukaryote kingdoms under the eukaryote domain.

Haptophyta, Cryptophyta, Centrohelida, Telonemia, Picozoa, Apusomonadida, Ancyromonadida, Breviatea, and the species are among the minor groups of eukaryotes whose place are unclear or appear to lie outside the larger groupings. Overall, it appears that, despite advances, there are still major ambiguities in the development of eukaryotes and their categorization.

Although there are many different forms of eukaryotic cells, animals and plants are the most well-known eukaryotes and so provide an ideal starting point for learning about eukaryotic structure. However, there are several significant distinctions between fungi and many protists.

- Animal cell
- Plant cell
- Fungal cell
- Other eukaryotic cells.

CONCLUSION

The *cyanelles* (abnormal plastids) of the glaucophytes, the haptonema of the haptophytes, and the ejectosomes of the cryptomonads are examples of peculiar organelles found in eukaryotes. Other structures, such as pseudopodia, may be found in a variety of eukaryote groups, such as lobose amoebozoans and reticulose foraminiferans, in diverse forms.

Eukaryotic microorganisms are a varied collection of organisms with a variety of life cycles, morphological specializations, and dietary requirements. Although viruses and bacteria cause more illnesses than tiny eukaryotes, these eukaryotes are responsible for several serious public health issues.