

In an avalanche of progress in the study of cells, the coming decade included the characterization of the minimal media requirements for cells and development of sterile cell culture techniques.

It was also aided by the prior advances in electron microscopy, and later advances such as the development of transfection methods, the discovery of green fluorescent protein in jellyfish, and discovery of small interfering RNA (siRNA), among others.

The study of the structure and function of cells continues today, in a branch of biology known as cytology.

Advances in equipment, including cytology microscopes and reagents, have allowed this field to progress, particularly in the clinical setting.

Early History of cells

1595 – Jansen credited with 1st compound microscope

1658- Jan Swamerdam Observed red blood corpuscles of frog for the first time.

1661-Marcello Malpighi found that slice of plant and animal tissues contained small structure or utricles

1665 – Hooke described 'cells' in cork.

1674 – Leeuwenhoek discovered protozoa. He saw bacteria some 9 years later.

1831 – Robert Brown described the cell nucleus in cells of the orchid. He described that the nucleus was the regular cell organelle and termed it nucleus.

1839 – Schleiden and Schwann proposed cell theory.

1839-- J.E Purkinje coined the term protoplasm.

1840 – Albrecht von Roelliker realized that sperm cells and egg cells are also cells.

1856 – N. Pringsheim observed how a sperm cell penetrated an egg cell.

1858 – Rudolf Virchow (physician, pathologist and anthropologist) expounds his famous conclusion: omnis cellula e cellula, that is cells develop only from existing cells [cells come from preexisting cells]

1857 – Kolliker described mitochondria.

1879 – Flemming described chromosome behavior during mitosis.

1883 – Germ cells are haploid, chromosome theory of heredity.

1898 – Golgi described the golgi apparatus.

1938 – Behrens used differential centrifugation to separate nuclei from cytoplasm.

- 1939 – Siemens produced the first commercial transmission electron microscope.
- 1952 – Gey and coworkers established a continuous human cell line.
- 1955 – Eagle systematically defined the nutritional needs of animal cells in culture.
- 1957 – Meselson, Stahl and Vinograd developed density gradient centrifugation in cesium chloride solutions for separating nucleic acids.
- 1965 – Ham introduced a defined serum-free medium. Cambridge Instruments produced the first commercial scanning electron microscope.
- 1976 – Sato and colleagues publish papers showing that different cell lines require different mixtures of hormones and growth factors in serum-free media.
- 1981 – Transgenic mice and fruit flies are produced. Mouse embryonic stem cell line established.
- 1995 – Tsien identifies mutant of GFP with enhanced spectral properties
- 1998 – Mice are cloned from somatic cells.
- 1840-1999 – Hamilton and Baulcombe discover siRNA as part of post-transcriptional gene silencing (PTGS) in plants.