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## **Promising approaches to mammalian cell culture of Chinese Hamster Ovary (CHO)**

**Al-Baraa Akram**

*Portland laboratory in De Montfort University in Leicester (United Kingdom)*

In the past 30 years, the mammalian cell cultures especially derived from humans and rodents, were and still the major vehicles for biologics production. Small molecules biologics are types of medications which include medicated proteins and viral vaccines which can be used for cancer treatment, protection and treatment of genetic diseases and hereditary problems.

Most products generated from animal cell cultures have huge biotechnological values; they depend on conventional techniques in manufacture using microorganisms which resulted from genetic engineering. The flourish of new techniques allowed improving and developing to be made in the proper culture medium, modification of cells and bioreactors' designing as well as operation. It is expected that they will be used commercially to connect these products with market places.

In this paper, the process of culturing tissues of Chinese Hamster Ovary (CHO) will be illustrated with general protocols by passing cells after removing their culture medium then washing them with phosphate buffer saline, after that trypsin is added to detach the cells and trypan blue is put as a dye to detect the cells and finally cells are counted under the microscope. The cells will be put in room temperature after that for 3 months to divide as they will become visible to naked eye.

Mammalian cell culture generally is the main target of therapeutic proteins and viral vaccine manufacture which is synthesized biologically, the type of bio-manufactured protein and viral vaccine is determined according to the method of mammalian cell cultivation and derivatives.

Basically, the cells which are derived from animal tissues are kept in cultures to be used for research purposes, especially for producing vaccines from viruses and medicated proteins as well as producing functional cells which are divided to become tissues which can be used as analogues for the field of regenerative medicine. The potentials of mammalian cells are actively harnessed with regard to optimization and design of the process.

This article explains also how mammalian cells are derived, their usage and harnessing techniques to obtain their full potentials.

### **Biography**

Al-Baraa Akram is a clinical pharmacist and researcher in New York-USA. He had his bachelor degree in clinical pharmacy from faculty of pharmacy-Assiut University in Egypt and he had his master degree in pharmaceutical biotechnology from De Montfort University in Leicester in United Kingdom. He published 11 journal articles and 15 books, he has also 6 patents. He works as a pharmacist in Egypt and United States for more than 6 years and he is also an editor in neurology and neuro-rehabilitation journal. He participated in many international conferences as a speaker and worked as a demonstrator in faculty of pharmacy-pharmacognosy department in 6th October University in Egypt, he was awarded the best scientific research in Arab republic of Egypt in 2017 from Aswan University and he awarded scholarships in Russia, United Kingdom and Germany.

He participated in many international conferences as a lecturer in United States, France and India.

albraaakram94@gmail.com