The preparation of rat cerebellar synaptosome and its applications in studying presynaptic membrane proteins

Hosseini SM (PhD)
Department of Physiology
Gorgan University of Mecidal Sciences

Asgari A (PhD)
Department of Physiology
Baquiyatallah University of Mecidal Sciences

Mehrani HA (PhD)
Department of Biochemistry
Baquiyatallah University of Mecidal Sciences

Khoshbaten A (PhD)
Department of Physiology
Baquiyatallah University of Mecidal Sciences

Corresponding Author:
Hosseini SM (PhD)

E-mail:
hosseini@goums.ac.ir

Abstract

Background&Objective: Synaptosomes as an In Vitro model have unique properties. So, general method of preparation and their applications in studying presynaptic mebrane proteins are introduced.

Materials&Methods: This study was done by using five rats and in every examples. Synaptosomes were prepared from rat cerebellum. In order to verify structurally and functionally, biochemical, morphological and their response to depolarization were tested.

Results: Lactate dehydrogenize activity rised after exposure to detergent; 9±1.8 (n=5). 15 mM K+-evoked depolarization increased synaptosomal exogenous neurotransmitter release 3±0.76 (n=5) times, compared to the basal state. Plasma membrane, mitochondrion and synaptic vesicles were observed in electron micrographs.

Conclusion: Application of synaptosomal samples may provide useful information in both basic and clinical researches because it is efficient and can easily be prepared, even from human tissues.

Key Words: Synaptosome, Human samples, In vitro model