

(2010 / 2/ 15 2009 / 11 /25 )

*.Mus musculus*

Topiramate

/ 8.4

3.29 %4.3

%21.97

%

%10.98

.%0.0

/ 0.42

% 4.76 %14.28

/ 0.84

%2.5 %6.66

%0.0

:

# **Folic Acid Role in Reducing the Effect of Topiramate Drug on the Central Nervous System s Malformations of Mice Albino Embryos**

**Janan H. Abdul-Fattah**

*Department of Biology*

*College of Science*

*Mosul University*

**Fatin T. Abdul-Rhman**

*College of Mosul Medical*

*Mosul University*

## **ABSTRACT**

This study was conducted to determine the gross and histopathological effects caused by Topiramate (a curing drug of epilepsy) on the Central Nervous System (CNS) in the mouse *Mus musculus* embryos. A dose (8.4 mg/kg) of body weight (b.w.) of Topiramate, were given from 1<sup>st</sup> to 18<sup>th</sup>. day of gestation, to pregnant mice. This caused various malformations in brain and spinal cord as 4.39% and 3.29% respectively. Histological examination showed 21.97% abnormalities of brain as exencephally, degeneration and necrosis of neurons, and large size brain. The spinal cord showed 10.98% histological defects such as abnormal position, vacuolation of neurons, congestion of dorsal blood vessel wall at the upper part of the spinal cord. In order to show folic acid role in reducing malformations, Topiramate were mixed with 0.42 mg/kg b.w. folic acid, resulting complete reduction of external malformations of brain and spinal cord 0%, and histological defects were reduced to 14.28% and 4.76% respectively. Using Topiramate with 0.84 mg/kg b.w. folic acid, they showed also complete reduction of external malformation of brain and spinal cord (0.0%). While histological defects were reduced to 6.66% and 2.5% respectively.

**Keywords:** Central Nervous System, mouse embryo, Topiramate, folic acid.