

CNS Effects - Enzymes

- EMFs modify hydrogen bonds → Effecting
 - Hippocampus
 - Cholinergic System
 - GABA
- Structural changes to many enzymes
 - Cytochrome p450-reductase
 - AchE – enzyme that catalyzes hydrolysis of acetylcholine. Affects learning and wakefulness

Author-Year	Frequency- Intensity-Time	Model-Effect
Testylier [2002]	Low intensity EMR.	Rats, modification of the hippocampal cholinergic system.
Bartieri [2005]	EMR exposure.	Structural and biochemical changes in AchE.
Vorobyov [2004]	Repeated exposure to low-level extremely low frequency-modulated EMR	Freely moving rats, baseline and scopolamine-modified EEG.
Mausset [2001]	4 W/kg.	Rat, decrease in GABA, an inhibitory transmitter, content in the cerebellum.
Mausset-Bonnefont [2004]	Acute GSM 900-MHz exposure at 6 W/kg.	Rat brain, changes in affinity and concentration of NMDA and GABA receptors.
Wang [2005]	900 MHz.	Cultured rat hippocampal neurons, changes in GABA receptors and reduced excitatory synaptic activity.
Xu [2006]	GSM 1800-MHz.	Cultured hippocampal neurons, number of excitatory synapses.
Lopez Martin [2006]	GSM signal.	Rats given subconvulsive doses of picotoxin, a drug that blocks the GABA system, seizure facilitated.
Beason and Semm [2002]	GSM signal.	Birds, increase and decrease in firing rates.