

Здравоохранение

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FP7-HEALTH-2007-A

V.I. Vernadsky Taurida National University

Neurophysiologic study of affective disorders in model experiments on wake animals

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:: Collaboration

Project Proposal

Title: Neurophysiologic study of affective disorders and its correction in model experiments on wake animals with help of alternating magnetic fields

Type Details: Epidemiologic studies prove the wide distribution of depressive and bipolar disorders among the psychopathological syndromes. The ethiology of these disorders is connected with the monoaminergic systems dysfunction. The analysis of neuronal electric activity of the structures participating in the pathogenesis of affective disorders let us deduce on their metabolism and judge on positive effects of therapeutic influence. In connection with this we suggest to study the neuronal activity of the brain stem structures attributed to control emotional states (substantia nigra, locus coeruleus and dorsalis raphe nuclei) in the model experiments on wake animals (cats). We plan to analyze the correlation between the impulse activity of brain stem neurons and EEG patterns in animals under different functional states.

At present of high popularity are non-medical methods of various disorders treatment including magnetic fields effect. We have shown that alternating magnetic fields can modify the impulse activity of cortex neurons and affect the conditioned reflex activity of animals. However the alternating magnetic fields effect on neuronal activity of brain monoaminergic structures of wake animals has not yet been studied enough. We suggest to estimate the effects of weak electromagnetic fields of low (1-10Hz) and high (40-50Hz) frequency as a feasible correction factor of functional states of animals.

The project may help contribute greatly to solution of the affective disorders problem. The current project may turn relevant to many medical problems, particularly the affective disorders correction and prevention as well as non-medical treatment methods development.

FRAMEWORK 6C

Research Interest: General Biomedical Sciences; Bioelectromagnetics, Pharmacological sciences, pharmacognosy, pharmacy, toxicology, EMF.

Expiry Date: 2008-03-01

:: Target Partner

Expertise: Scientific groups who are interested in neurophysiologic regulation and electromagnetic modification of the behavior in mammals in norm and pathology. We seek partners who are open to the collaboration in study of mechanism of influence magnetic fields on nervous system.

Country: ЦШТЕРРЕИХ, BELGIQUE-BELGIJ, BULGARIA, KYPROS/KIBRIS, CESKA REPUBLIKA,

DEUTSCHLAND, DANMARK, EESTI, ESPACA, SUOMI/FINLAND, FRANCE, HELLAS, Hrvatska, MAGYARORSZAG, IRELAND, ISRAEL, ITALIA, LIETUVA, LUXEMBOURG (GRAND-DUCHË), LATVIJA, MALTA, NEDERLAND, POLSKA, PORTUGAL, ROMANIA, SVERIGE, SLOVENIJA, SLOVENSKA REPUBLIKA, TURKEY, UNITED KINGDOM

:: Organisation Details

Name: Taurida National University named V.I. Vernadsky

Department: department of human and animal physiology and biophysics

Address: 4, Vernadsky Prt.

Simferopol 95007

UKRAINE

Type: Research

Number of Employees: 250 -
500

Details:

To study the brain stem aminergic neurons activity and its connection with cortex EEG under different functional states of animals.

To find out the magnetic fields effect of extremely high and extremely low frequency range on human electroencephalogram parameters.

To investigate through model experiments the influence of extremely low frequency modulation and extremely high frequency radiation on skin surface to obtain tranquilizing and antistress effects in extreme cases.

To find out the ways of using the extremely high frequency radiation to decrease drug-dependence.

To investigate the influence of variable magnetic fields of extremely low frequency on nervous system activity, including:

- role clarification of the natural geomagnetic perturbations during the work of human-operator in extreme cases and possibility to prevent such effects;
- regulation of sleep-wake cycle.

Turnover: 1.72 million euro

Keywords: extremely low frequency of magnetic fields, microwave radiation on neurons activity of the brainstem structures.