L 8186-66

ACC NR: AP5027477

an intact brain. Acetylcholinesterase activity of the cortex, thalamus, hypothalamus, midbrain, and medulla oblongata was determined by a photoelectrocolorimetric method developed by G. A. Panosyan. EEG activity of the sensomotor and optic areas was recorded by an eight channel Kayzer electroencephalograph. Findings show that galanthamine inhibits the acetylcholinesterase activity of the brain to the same degree in animals with a premesencephalic section as in animals with an intact brain. Results for eserine in a corresponding dose of 0.9 mg/kg were similar. No EEG activation reaction was found for animals with the premesencephalic section despite almost complete inhibition of acetylcholinesterase activity above the section. However, a distinct change in bioelectric activity was found for animals with an intact brain, with EEG activation directly dependent on the degree of acetylcholinesterase activity inhibition in the mesencephalic part of the brain. The authors conclude that EEG activation depends not only on acetylcholinesterase activity inhibition of the brain, but also on the presence of a connection between the cortex and mesencephalic reticular formation. Orig. art. has: 2 tables and 2 figures.

SUB CODE: LS/ SUBM DATE: 08Apr64/ ORIG REF: 003/ OTH REF: 004

jw

Card 2/2

L 8186-66 EWA(j)/EWA(b)-2/EWT(1) RO

ACC NR: AP5027477 SOURCE CODE: UR/0219/65/060/010/0057/0060

AUTHOR: Il'yuchenok, R. Yu.; Nesterenko, L. N.

ORG: Pharmacology Laboratory of the Department of Experimental Biology and Pathology of the Cytology and Genetics Institute of the Siberian Branch AN SSSR, Novosibirsk (Laboratoriya farmakologii Otdela eksperimental'noy biologii i patologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR)

TITLE: Effects of eserine and galanthamine on acetylcholinesterase and bioelectric activity of the brain in animals with a premesencephalic section

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 60, no. 10, 1965, 57-60

TOPIC TAGS: experiment animal, nervous system drug, enzyme, electroencephalography, brain tissue, midbrain, cerebral cortex, bioelectric phenomenon, colorimetric analysis

ABSTRACT: Effects of anticholinesterase preparations on acetylcholinesterase activity and bioelectric activity of the brain were studied in a series of experiments on cats. Galanthamine (9 mg/kg) and eserine (0.9 mg/kg) were administered intravenously to groups of animals with

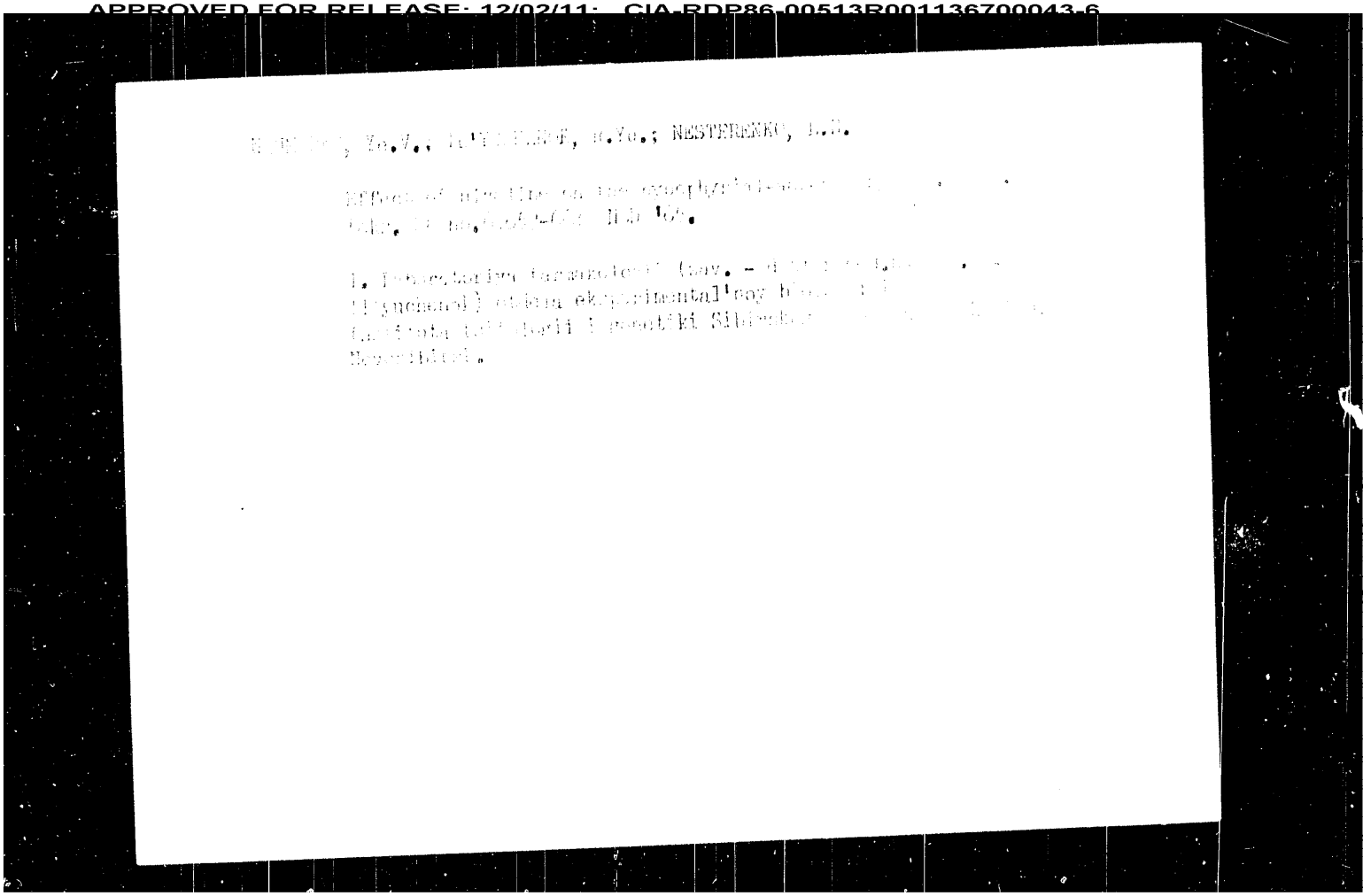
Card 1/2 UDC: 615.785.4-092.259:612.826+612.826.1/.3-089.856]:612.822

0702 0228

IL'YUCHENOK, R.Yu.; NESTERENKO, L.N.

Participation of the acetylcholine-cholinesterase system in the mechanism of reticulocortical activation. Fiziol. zhur. 51 no.10:1177-1181 O '65. (MIRA 18:12)

1. Laboratoriya farmakologii Otdela eksperimental'noy biologii i patologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk. Submitted May 6, 1964.



L 15744-66
ACC NR: AP5024181

mine had no effect on cholinesterase activity in the mesoencephalon-diencephalon region and medulla oblongata or on the bioelectrical activity of the cortex, probably because the drug does not readily penetrate the blood-brain barrier. However, direct injection into the ventricles sharply lowered cholinesterase activity and induced changes in bioelectrical activity similar to those observed after the administration of tertiary anticholinesterase compounds (galantamine and eserine). The impermeability of the blood-brain barrier to neostigmine is relative. Intravenous injection of a large dose (1 mg/kg) inhibited anticholinesterase activity and accelerated the cortical biopotentials. Orig. art. has: 2 figures, 1 table.

SUB CODE: 06/ SUBM DATE: 12Jun64/ ORIG REF: 007/ OTH REF: 003

Card 2/2 mc

L 15744-66 EWT(1) RO
ACC NR: AP5024181 SOURCE CODE: UR/0290/65/000/002/0171/0174

AUTHOR: AUTHOR: Nesterenko, L. N.

ORG: Experimental Biology Section, Institute of Cytology and Genetics, Siberian Department AN SSSR, Novosibirsk (Otdel eksperimental'noy biologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR)

TITLE: Bioelectric and anticholinesterase activity of the brain after the administration of neostigmine (prozerin)

SOURCE: AN SSSR. Sibirskoye otdeleniye, Izvestiya. Seriya biologo-meditsinskikh nauk, no. 2, 1965, 171-174

TOPIC TAGS: electrophysiology, brain, nervous system drug, cerebral cortex, electric potential

ABSTRACT: Experiments were performed on cats to determine whether there is a relationship between the degree of inhibition of cholinesterase activity and change in bioelectrical activity of the brain induced by the injection of neostigmine directly into the lateral ventricles. Intravenous injection of 0.05-0.1 mg/kg of neostig-

UDC: 615.787

Card 1/2

L 15745-66
ACC NR: AP5024180

other hand, no such relationship was noted between the dose of nivalin and the degree of inhibition of brain cholinesterase activity; 2.5, 5, and 10 mg/kg doses reduced this activity 1.4, 1.7, and 2 times, respectively, below the original level. While the 2.5 mg/kg dose sharply reduced blood cholinesterase activity to approximately one-fourth the original level, larger doses had no significant effect. The author concludes that nivalin has both an anticholinesterase effect on the adrenal cortex and, to some extent, a cholinomimetic effect. Orig. art. has: 1 table, 1 figure.

SUB CODE: 06/ SUBM DATE: 06May64/ ORIG REF: 004/ OTH REF: 006

Card 2/2 mc

L 15745-66 EWT(1) RO

ACC NR: AP5024180 SOURCE CODE: UR/0290/65/000/002/0169/0171

AUTHOR: Naumenko, Ye. V.; Nesterenko, L. N.

ORG: Experimental Biology Section, Institute of Cytology and Genetics, Siberian Department AN SSSR, Novosibirsk (Otdel eksperimental'noy biologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR)

TITLE: Adrenocortical function and blood and brain cholinesterase activity after the administration of nivalin

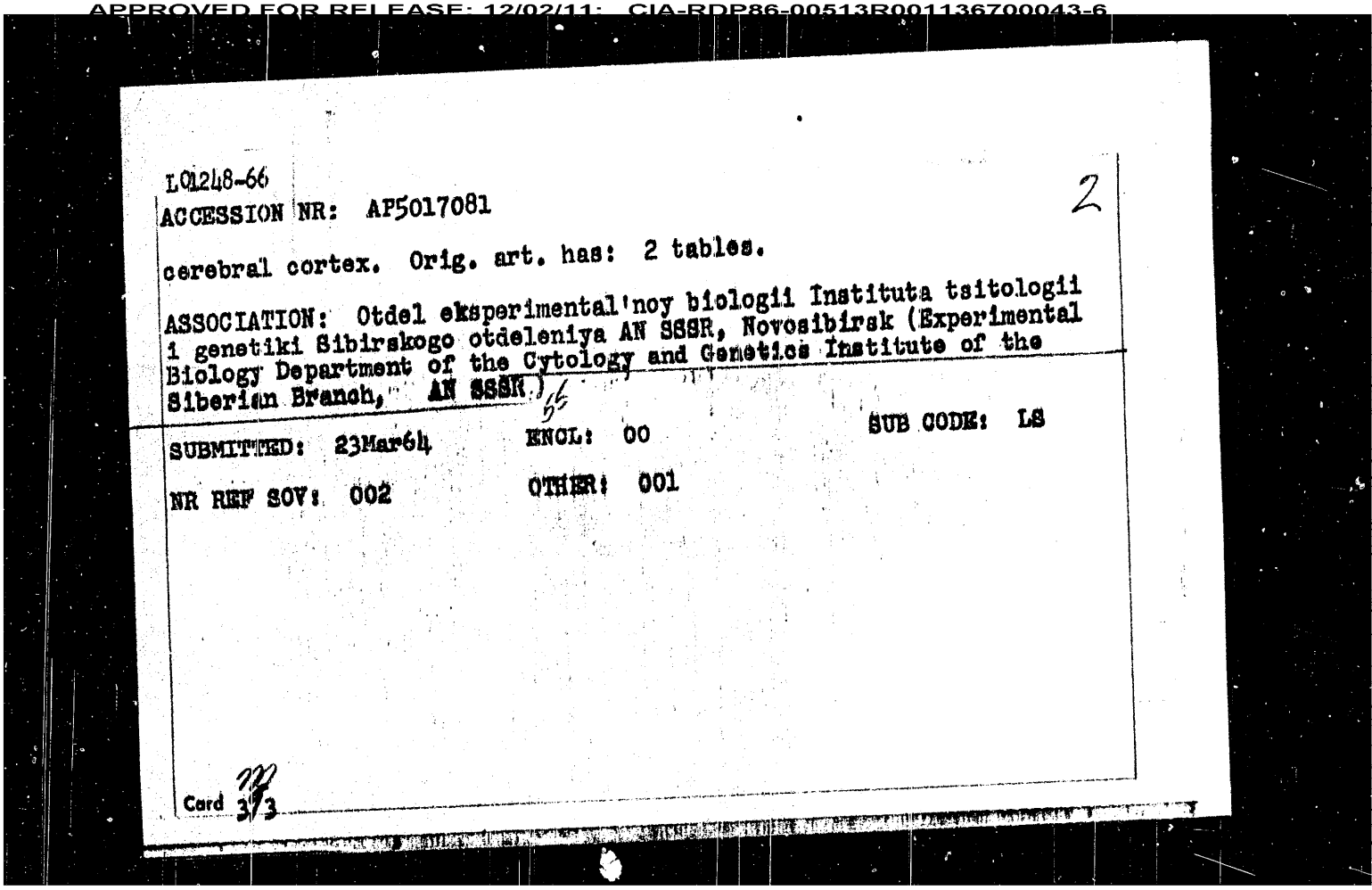
SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya biologo-meditsinskikh nauk, no. 2, 1965, 169-171

TOPIC TAGS: physiology, brain, blood, enzyme, acetylcholine, nervous system drug, pituitary, corticosteroid

ABSTRACT: Experiments on guinea pigs injected with the anticholinesterase agent nivalin revealed a direct proportional relationship between the dose injected and the blood corticosteroid level: a two- and fourfold increase in nivalin caused a two- and fourfold increase in 17-oxycorticosteroid content of the blood. On the

UDC: 615.74 + 615.78 + 615.45

Card 1/2



L 01248-66
ACCESSION NR: AP5017081

2

cerebral cortex. Orig. art. has: 2 tables.

ASSOCIATION: Otdel eksperimental'noy biologii Instituta tsitologii i genetiki Sibirskogo otdeleniya AN SSSR, Novosibirsk (Experimental Biology Department of the Cytology and Genetics Institute of the Siberian Branch, AN SSSR)

SUBMITTED: 23Mar64 ENCL: 00 SUB CODE: LS

NR REF SOV: 002 OTHER: 001

Card 3/3

L01248-66

ACCESSION NR: AP5017081

parts of the brain, mostly in the cerebral cortex and medulla oblongata and to a much lesser degree in the midbrain. As for bioelectric activity, no statistically reliable changes were found with galanthamine doses up to 3 mg/kg. Larger doses (3 to 9 mg/kg) significantly depressed acetylcholinesterase activity in all parts of the brain except the midbrain. The bioelectric activity changes following larger dose administration accurately reflected the acetylcholinesterase changes. Similar results were found with eserine administration (in doses 10 to 12 times smaller). These data suggested that the activating effect of anticholinesterase substances is based specifically on depressed acetylcholinesterase activity of the midbrain. To test this hypothesis, additional experiments were carried out on cats with a premesenchephalic section. With galanthamine and eserine administration, the degree of acetylcholinesterase activity depression in all parts of the brain, including the parts above the section, was found the same as for animals with an intact brain. However, the anticholinesterase substances did not produce any EEG activity. Thus, bioelectric activation apparently requires blocking of the enzyme in the midbrain, in addition to depression of acetylcholinesterase activity in the diencephalon and

Card 2/3

L 01248-66 EWT(1)/EWA(j)/EWA(b)-2 BW/RO

ACCESSION NR: AP5017081 UR/0290/65/000/001/0147/0149
615.785.4

AUTHOR: Il'yuchenok, R. Yu.; Nesterenko, L. N.

TITLE: Correlation between bioelectric and acetylcholinesterase activity changes of the brain under the action of galanthamine and eserine

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya biologo-meditsinskikh nauk, no. 1, 1965, 147-149

TOPIC TAGS: experiment animal, nervous system drug, drug effect, bioelectric phenomenon, enzyme, cerebral cortex, cerebellum, midbrain

ABSTRACT: In experiments on 166 cats acetylcholinesterase activity was determined in the cerebral cortex, thalamus, hypothalamus, midbrain, and medulla oblongata by a photocolorimetric method following intravenous administration of galanthamine or eserine in varying doses. Brain electric activity was recorded by an 8-channel electroencephalograph with electrodes implanted into different parts of the skull. Findings show that even a small dose of galanthamine (0.1 mg/kg) depresses acetylcholinesterase activity in different

Card 1/3

NIKITENKO, G.F.; NESTERENKO, L.M.

Some problems of the biology of barley flowering. Dokl. AN SSSR 164 no.4:925-927 O '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva TSentral'no-Chernozemnoy polosy im. V.V.Dokuchayeva. Submitted February 17, 1965.