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**Proceedings of the Second Soviet-Italian Symposium
on Transmitters in the Action of Psychotropic Drugs**

**Editors: V.G. LONGO
V.V. ZAKUSOV**

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ANNALI DELL'ISTITUTO SUPERIORE DI SANITÀ



Direttore responsabile: Francesco POCCHIARI.

Comitato direttivo: i Direttori dei Laboratori e il Direttore della Segreteria per le Attività Culturali dell'Istituto Superiore di Sanità.

Comitato di redazione: Giuliano D'AGNOLO (*redattore capo*); Wilma ALBERANI; Piero Augusto BATTAGLIA; Giorgio BIGNAMI; Maurizio CIGNITTI; Enrico CINGOLANI; Michele GRANDOLFO; Pietro Luigi INDOVINA; Vittorio SILANO; Patrizia SINISCALCHI (*segretaria*).

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**PROCEEDINGS OF THE SECOND SOVIET-ITALIAN
SYMPOSIUM ON TRANSMITTERS IN THE ACTION
OF PSYCHOTROPIC DRUGS**

Moscow, 27-29 September 1977

Editors:

V.G. LONGO - V.V. ZAKUSOV

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PROGRAM

TUESDAY, SEPTEMBER 27 - 16.00

Opening addresses: V. V. Zakusov, V. G. Longo

Topic: PSYCHOTROPIC DRUGS, BEHAVIOUR AND MEDIATORY PROCESSES.

Chairmen: V. V. Zakusov (Moscow) V. G. Longo (Rome).

S. V. Anichkov, N. S. Sapronov, E. P. Bekhtereva (Leningrad): *The participation of monoaminergic mechanisms in the effect of neurotropic drugs on the secretory function of adenohypophysis.*

V. G. Longo, A. Scotti de Carolis (Rome): *EEG methods in the study of the mechanisms and site of action of centrally acting drugs.*

M. D. Mashkovsky, N. I. Andreyeva (Moscow): *Psychotropic activity of pyrazinoindole derivatives.*

G. L. Gessa, A. Tagliamonte (Cagliari): *Brain dopamine and serotonin receptors controlling sexual behaviour in male animals.*

E. B. Arushanyan, B. A. Tolpyshev (Chita): *Serotoninerbic mechanisms of phenamine stereotypy.*

WEDNESDAY, SEPTEMBER 28 - 9.30

Morning session

Topic: PSYCHOTROPIC DRUGS, BEHAVIOUR AND MEDIATORY PROCESSES.

Chairmen: S. V. Anichkov (Leningrad), L. Angelucci (Rome),

L. Valzelli (Milan): *Effect of socio-environmental deprivation on brain biochemistry, behaviour and psychoactive drugs.*

A. V. Valdman, M. M. Kozlovskaya (Leningrad): *The role of adrenergic mechanisms in lorazepam activating effect.*

- L. Angelucci, P. Valeri (Rome):** *Influence of social environment and of drugs on ^3H -corticosterone uptake in different brain areas.*
- N. K. Barkov, L. M. Andronova, G. N. Lakoza (Moscow):** *Some specific features of neuroleptic and antidepressive drugs effect.*
- E. E. Zvartau, N. A. Patkina (Leningrad):** *The role of monoaminergic mechanisms of reinforcement systems in the effect of some psychotropic drugs.*
- L. H. Allikmets, A. M. Zharkovsky (Tartu):** *The balance between monoaminergic systems and the effects of dopaminemimetics on emotional behaviour.*
- A. Oliverio (Rome):** *A pharmacogenetic approach to the effects of opiates.*
- I. P. Anokhina, B. M. Kogan, N. A. Christolubova (Moscow):** *A comparative characteristics of the effects of narcotics of different chemical structure on brain catecholamines.*
- S. S. Krylov (Leningrad):** *The role of the selective blockade of adrenergic structures of the brain in the elimination of narcomaniac dependence.*

WEDNESDAY, SEPTEMBER 28 - 16.00

Afternoon session

Topic: DOPAMINERGIC MECHANISMS IN THE ACTION OF PSYCHOTROPIC DRUGS.

Chairmen: **M. D. Mashkovsky (Moscow), G. Gessa (Cagliari).**

- K. S. Rayevsky, M. F. Mineyeva, V. S. Kudrin (Moscow):** *The effect of neuroleptics on brain tyrosine hydroxylase.*
- M. Trabucchi (Brescia):** *Regulation of dopaminergic activity in the substantia nigra: a site of action for neuroleptics.*
- M. F. Mineyeva, V. S. Kudrin, K. S. Rayevsky (Moscow):** *Brain tyrosine hydroxylase: its kinetic properties and regulation of the activity.*
- M. Raiteri, F. Cerrito, R. Del Carmine, G. Levi, T. Ribera (Rome):** *Release of dopamine from striatal synaptosomes.*
- P. F. Spano, A. Mulas, R. Longoni, L. Garau, L. Spina, E. Stefanini (Cagliari - Milan):** *Localization of dopamine receptors in the substantia nigra.*
- G. Di Chiara, M. L. Porceddu, P. L. Onali, M. Morelli, G. L. Gessa (Cagliari):** *Regulation of dopaminergic neuronal activity by dopamine receptors.*
- Y. S. Borodkin (Leningrad):** *The role of intracentral relationships in the mechanism of action of memory-affecting drugs.*

- G. U. Corsini, M. Del Zompo, M. P. Piccardi, F. Zonza, A. Mangoni, G. L. Gessa (Cagliari): *Evidence for the existence of self-inhibitory dopamine receptors in human brain.*
- V. A. Fateyev, Y. Y. Baltkals, M. A. Artiuch (Riga): *Adenosine effect on apomorphine, phenamine and haloperidol actions.*

THURSDAY, SEPTEMBER 29 - 9.30

Morning session

Topic: INTERACTION OF NEUROTRANSMITTERS: GABA-ERGIC AND CHOLINERGIC PROCESSES.

Chairmen: S. N. Golikov (Leningrad), L. Valzelli (Milan).

- R. U. Ostrovskaya (Moscow): *GABA-ergic structures of the cerebral cortex and benzodiazepine tranquilizers.*
- S. N. Kozhechkin (Moscow): *Benzodiazepines are GABA synergists. Micro-iontophoretical evidence.*
- G. Biggio, M. Casu, M. G. Corda, G. L. Gessa (Cagliari): *Cerebellar cyclic GMP is controlled by dopamine receptors in striatum and by GABA receptors in cerebellum.*
- I. A. Sytinsky, A. M. Bezborodov, O. E. Blagova, N. N. Konovalova, V. M. Kopelevich, T. N. Medvedeva, Z. S. Nikitina (Leningrad): *The influence of some pharmacological substances on the activity of GABA metabolism enzymes during alcohol intoxication.*
- A. I. Balakleyevsky, N. P. Bobrova, N. V. Shevchenko (Minsk): *Regulation of GABA metabolism in various brain structures by cholinergic and dopaminergic drugs.*
- G. Pepen (Florence): *Drug effect on cholinergic mechanisms in the cerebral cortex.*
- S. N. Golikov, A. T. Selivanova (Leningrad): *Cholinergic mechanisms in the integrative activity of the brain.*
- U. Scapagnini (Catania), G. Nisticò (Messina): *Psychotropic drugs and neuro-endocrine regulation of ACTH, TSH and prolactin secretion.*

Closing Remarks.

The Proceedings do not include all the reports presented at the Symposium because some of the manuscripts did not arrive in time for publication.

PROTOCOL

In accordance with the Agreement of collaboration between the USSR and Italy in the field of medical science and health service and also with the Protocol of the 2nd mixed Soviet-Italian session, the 2nd Soviet-Italian Symposium on the problem « Transmitters in the action of psychotropic drugs » was held in Moscow, September 27 - 29. The organizations responsible for the symposium were the Institute of Pharmacology of the Academy of Medical Sciences of the USSR and the All-Union scientific Society of pharmacologists.

The following scientists participated in the work of the symposium:

from the Soviet side: 32 prominent pharmacologists, specialists in the field of pharmacology of the central nervous system, with V. V. Zakusov, the academician of the Academy of Medical Sciences of the USSR, at the head of the delegation;

from the Italian side: 13 pharmacologists from the Institutes and Universities of Rome, Milan, Florence, Cagliari, Catania, Messina and Brescia, with Prof. V. Longo at the head of the delegation.

In the framework of the symposium 5 sectoral sessions were held, on which the problems of the role of transmitters in the effects of psychotropic drugs on behaviour, bioelectrical activity and neurochemical processes in the central nervous system were considered.

The themes of the sessions were the following:

1. Psychopharmacological drugs, mediatory processes and behaviour;
2. Monoaminergic mechanisms in the action of psychotropic drugs;
3. GABA-ergic mechanisms in the action of psychotropic drugs;
4. Cholinergic mechanisms in the action of psychotropic drugs;
5. Structural and functional grounds of the action of psychotropic drugs.

The symposium contributed to the comprehensive information exchange on the essential problems of modern psychopharmacology and demonstrated the high ideological and methodological level of the investigations of both sides in the field of research and development of new psychotropic drugs.

Both sides consider it useful to continue joint investigations in the following trends:

- the study of neurochemical and synaptic nature of drug dependence;
- the study of the role of central mediatory processes, cyclic nucleotides and enzymes of mediatory metabolism in the mechanism of action of psychotropic drugs and interaction of neurotropic drugs and receptors;
- the study of the mechanism of action of substances affecting the regulation of blood circulation;
- the investigations in the field of clinical pharmacology and pharmacokinetics.

On the basis of the results obtained in the studies, the publication of joint scientific works and further two-way exchange of information is planned. Both sides have agreed to have the next 3rd Soviet-Italian symposium on «Neurochemical mechanisms of action of psychotropic drugs» in Italy, in 1979.

Both sides have also agreed that it would be desirable that the term of specialists' stay on the working places should be increased up to 6-12 months.

It is recommended that the present Protocol should be ratified at the regular session of Soviet-Italian working group for the collaboration in the field of health service and medical science.

Two copies, in Russian and in English are signed in Moscow, on September 29, 1977, both texts are equally valid.

On behalf of the delegation of the Union
of the Soviet Socialist Republics

V. V. ZAKUSOV

*Academician of the Academy
of Medical Sciences of the USSR
Director of the Institute of Pharmacology
of the Academy
of Medical Sciences of the USSR*

On behalf of the delegation of Italy

Prof. V. LONGO

*Head of the Laboratory
of Pharmacology
of the Istituto Superiore di Sanità*

OPENING ADDRESSES

V. V. ZAKUSOV

Academy of Medical Sciences of the USSR, Moscow.

Dear participants of the Symposium, dear guests,

It is a great pleasure for me to have the honor to open the Second Soviet-Italian Symposium, held in the premises of the Institute of Pharmacology of the Academy of Medical Sciences of the USSR. As it is known, the First Soviet-Italian Symposium took place one year ago in Modena. I have kept, as have all the Soviet participants, the best memories of it. We admired everything: the scientific program, the excellent organization, the hospitality of our generous hosts. We acquired valuable knowledge, we had the opportunity to get acquainted with Italy, beautiful country, motherland of many geniuses of mankind.

The present Symposium is devoted to an essential problem: the role of neurotransmitters in the mechanism of action of neurotropic drugs. We approached this problem from various aspects: behavioral, neurochemical, biochemical, and molecular. Highly trained specialists in the field of pharmacology of transmitters take part in this Symposium. Discussions, exchange of opinions and ideas among the participants will undoubtedly have a positive influence on the further progress of the corresponding trends of pharmacology.

Let me wish the participants of the Symposium every success in their work. I would like also to wish that scientific contacts between Soviet and Italian pharmacologists further develop and strengthen for the welfare of the science to which each of us has dedicated his life.

V. G. LONGO

Istituto Superiore di Sanità, Rome.

It is an honor and a pleasure for me to introduce this Italo-Soviet Symposium on neurotransmitters in the effects of psychotropic drugs.

This opening speech reflects on one hand the appreciation of the heavy paper work performed by me in order to organize the meeting and on the other hand the personal relationships with professor Zakusov. I had the good fortune to meet him 21 years ago at the International Physiological Meeting in Brussels. Our interests in research had much in common, a close mutual friendship started, and I am very happy that today we are witnessing one practical achievement of these good relationships under the form of a meeting, organized into the frame of a protocol signed by the Public Health representative of the Soviet Union and of Italy.

We have invited a selected group of researchers in this field to analyze the different approaches and recent findings and to offer their personal views in the context of their disciplines. We will have three days to spend in scientific matters and I hope that the atmosphere of the meeting will be such as to encourage critical judgement and discussion. I would like now to spend a few words on organizational matters, making a proposal of implementation of our protocol. Exchange of information and organization of meetings such as the present one are important achievements. They should lead, however, to a more intimate form of collaboration through the establishment of long term fellowships. I have a long experience in this field which dates back to my position of Unesco-officer in Paris at the time when the International Brain Research Organization (IBRO) was implementing such kind of endeavours. In this connection I can mention here the foreign fellowship program of our Institute to which our Russian colleagues are welcomed to participate. I hope to discuss further with our hosts on this matter, in order to have, at the end of our meeting, some plans to submit to our Public Health representatives. I am convinced, in fact, that this is the best way to increase collaboration between specialists of various disciplines and to improve the exchange of information and ideas between scientists of different cultural background.