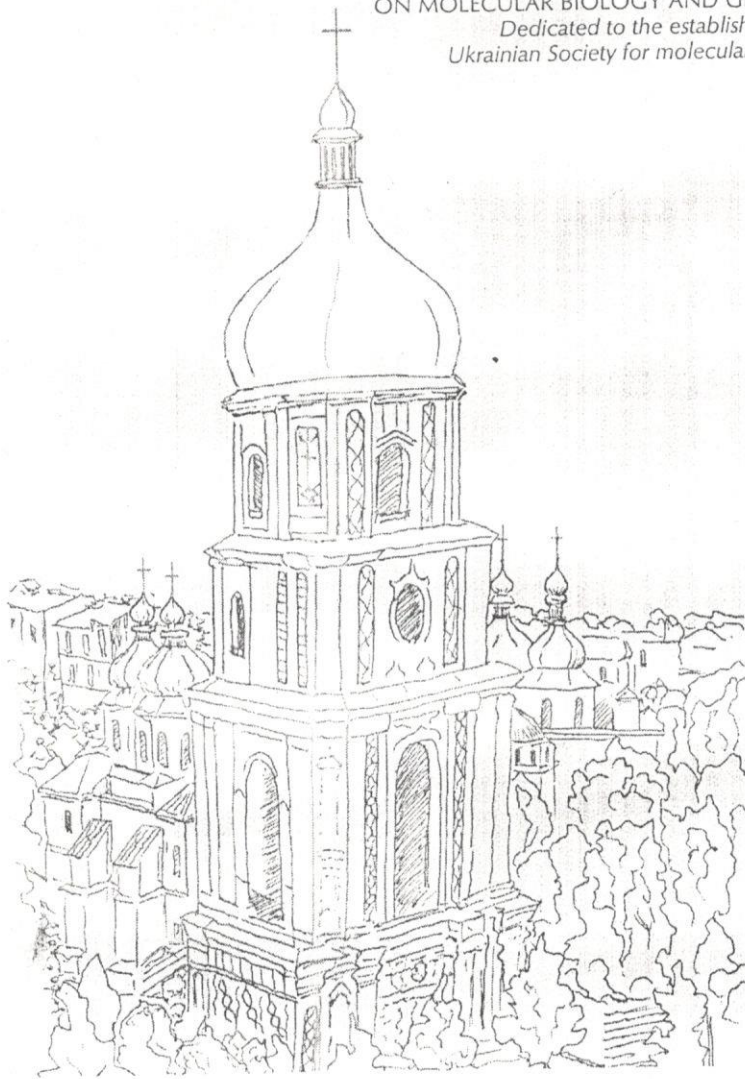


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**ABSTRACTS BOOK**

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ACCUMULATION OF  $\text{Ca}^{2+}$  IN THE SMOOTH MUSCLE CELLS  
MITOCHONDRIA AND SPERMINE EFFECT ON THIS PROCESS

T. O. Veklich

Paladin Institute of Biochemistry, National Academy of Science, Kiev,  
Ukraine

e-mail: [kinet@biochem.kiev.ua](mailto:kinet@biochem.kiev.ua)

In the experiments utilizing an isotopic technique ( $^{45}\text{Ca}^{2+}$ ) the spermine (0,01-5 mM) effect on sensitive to the action of ruthenium red and insensitive to the action tapsigargin  $\text{Mg}^{2+}$ , ATP-dependent  $\text{Ca}^{2+}$  accumulation in the smooth muscle cells treated by digitonine solution has been estimated. While using EGTA and A-23187 it has been testified that the latter is an accumulation of  $\text{Ca}^{2+}$  in the mitochondria being equal to  $740 \pm 30$  pmol of  $\text{Ca}^{2+}$  per  $10^5$  myocytes during 5 min ( $n=4$ ) at  $37^\circ\text{C}$ . The system is completely dependent on  $\text{Mg}^{2+}$  and needs in ATP (3 mM) and sodium succinate (3 mM).

Ruthenium red (10 mkM) and sodium azide (5 mM) inhibits Ca ions accumulation in the myometrium cells mitochondria. Ruthenium red inhibiting effect on  $\text{Ca}^{2+}$  energy-dependent accumulation in the mitochondria has displayed itself as more effective if compare with sodium azide: the value of the apparent constant of  $K_i$  inhibition has been equal to  $0,6 \pm 0,2$  mkM and  $0,9 \pm 0,3$  mM ( $n=5$ ) respectively. The mitochondria  $\text{Ca}^{2+}$ -transport system was absolutely insensitive to tapsigargin action as an effective of  $\text{Ca}^{2+}$ -accumulative system inhibitor of endoplasmatic reticulum.

Spermin has revealed itself as more effective one from polyamines at  $\text{Ca}^{2+}$  physiologic concentrations in the incubation medium and it stimulated calcium ions accumulation in the concentration range from 0,01 till 1 mM (220-230%). So, the value of apparent constant fro spermin is  $K_a=0,43 \pm 0,04$  mM ( $n=5$ ). It's essentially, that spermin stimulative effect displays itself in the low concentration field of calcium ions (100-110 nM).

The findings displayed indicate to the important role of spermin endogenic polyamine in regulating  $\text{Ca}^{2+}$ -dependent control of the smooth muscles, particularly myometrium, contraction-relaxation.

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ELICITOR ACTIVITY OF FEMALE MILK OLIGOSACCHARINES

L. Volkova

Kherson state pedagogical university, Kherson, Ukraine

e-mail: [lusi\\_vv@mail.ru](mailto:lusi_vv@mail.ru)

Oligosaccharines are a new class of particular carbohydrate molecules, which effectively regulate a metabolism of plant cells or organism as a whole that helps it to adapt for changes of an environmental. Oligosaccharines regulates the immune status of plant tissues. One of the known mechanisms of natural protection of plants to pathogen - are biosynthesis and accumulation of phytoalexins. They are formed in reply to infection influence by funguses or bacterium, i.e. this non-specific defensive reacting of plants to infection. Female milk oligosaccharines as well as the oligosaccharines of a plant and mushroom origin are plants growth and development regulators. Female milk oligosaccharines also have elicitor activity, they as well as others oligosaccharines induced phytoalexins synthesizing in soybean cotyledons.