MAO-A and MAO-B in rat female genital organs during early period of pregnancy

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INTRODUCTION: Monoamine oxidases (MAO) are enzymes located in the mitochondrial outer membrane. They exist as two forms, MAO-A and MAO-B, which are different gene products and have different substrate specificities. The objective of our study was to determine the localization of MAO in rat female gonads during preimplantation period of pregnancy.

METHODS: Pregnant rat females were killed on the first, on the third, and on the fifth day of pregnancy and animals were transcardially perfused with PBS. Ovaries, oviducts and uteri were immediately removed and embedded in fixative solutions. They served for the determination of MAO localization employing the immunohistochemical methods.

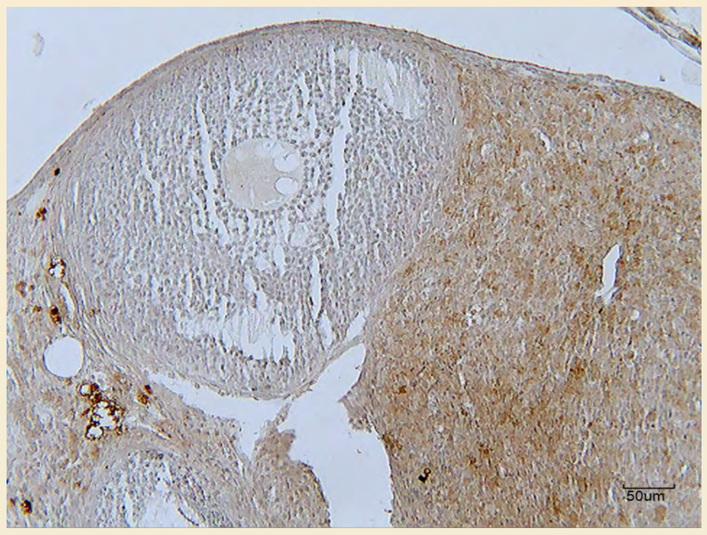

Figure 1. MAO-A in rat ovary was detected in *corpus luteum* but never in follicular cells or oocyte.

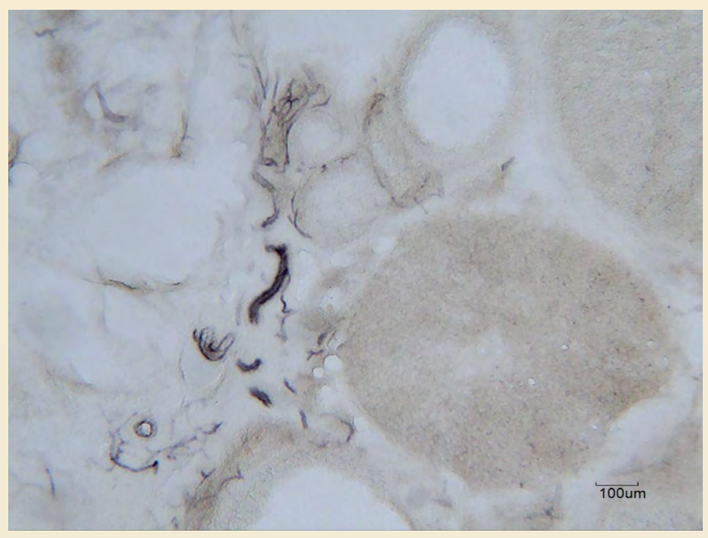

Figure 2. MAO-B in rat ovary was detected in the wall of blood vessels.

RESULTS AND DISCUSSION: MAO-A activity in ovary was visible in corpora lutea and in interstitial gland cells, while MAO-B was detected predominantly in blood vessels. Both MAO enzymes were seen in the smooth muscle fibers of the ovarian hilum. However, the presence of MAO enzymes was not detected in follicles at any stage of their development. In oviduct and uterus both MAO enzymes were visible in the similar places, it means in smooth muscle fibers, in mast cells and in blood vessels. To our knowledge this is the first paper describing detection of both MAO-A and MAO-B enzymes in female genital organs employing mimunohistochemistry.

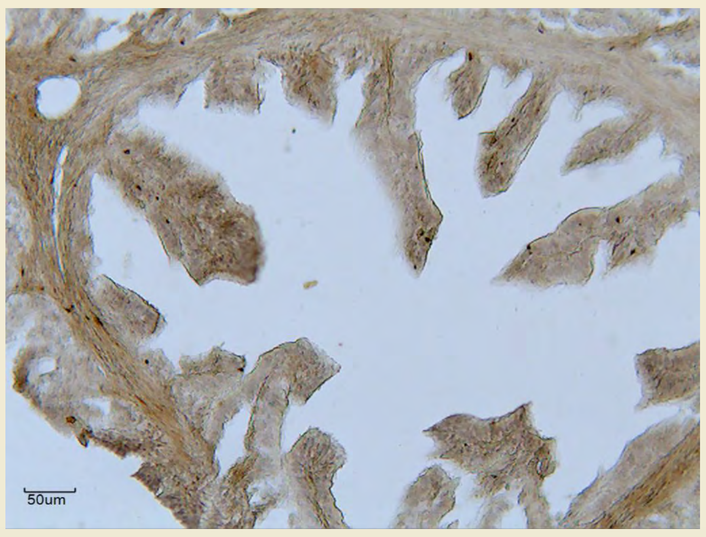

Figure 3. MAO-A in ampullar part of rat oviduct was detected in proper lamina of mucosa.

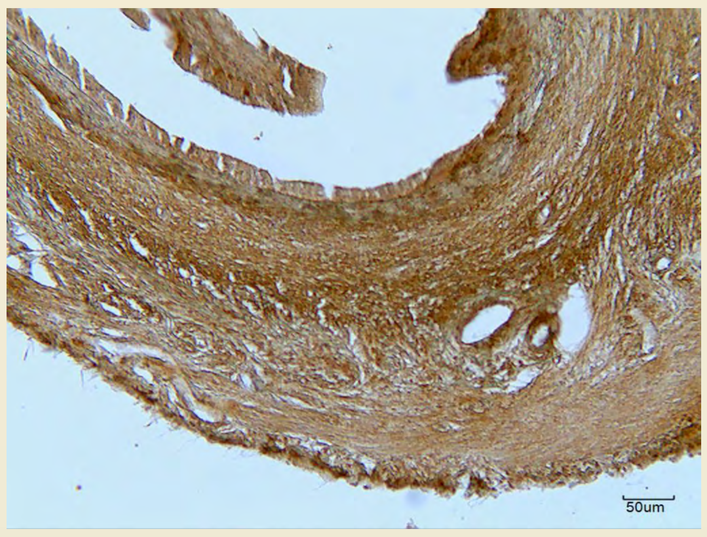

Figure 4. MAO-B in the isthmus of rat oviduct was predominantly detected in smooth muscular cells.

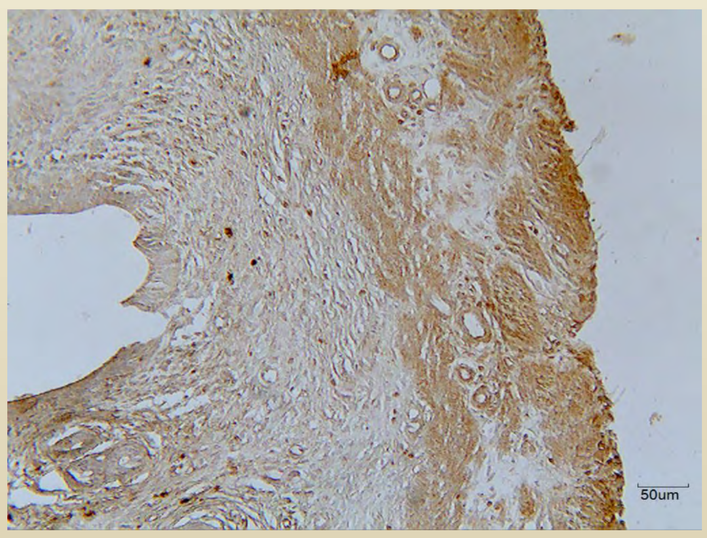

Figure 5. MAO-A in the rat uterus was abundantly seen in both circular and longitudinal smooth muscular layers.

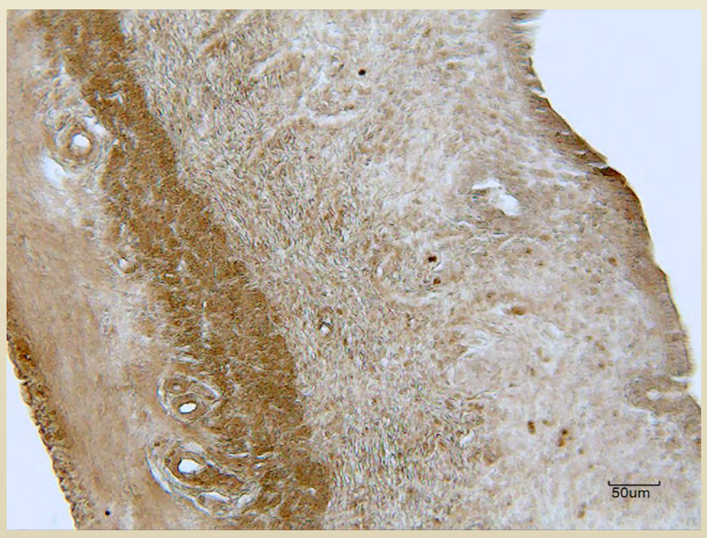

Figure 6. MAO-B in the rat uterus was predominantly detected in circular smooth muscular layer.

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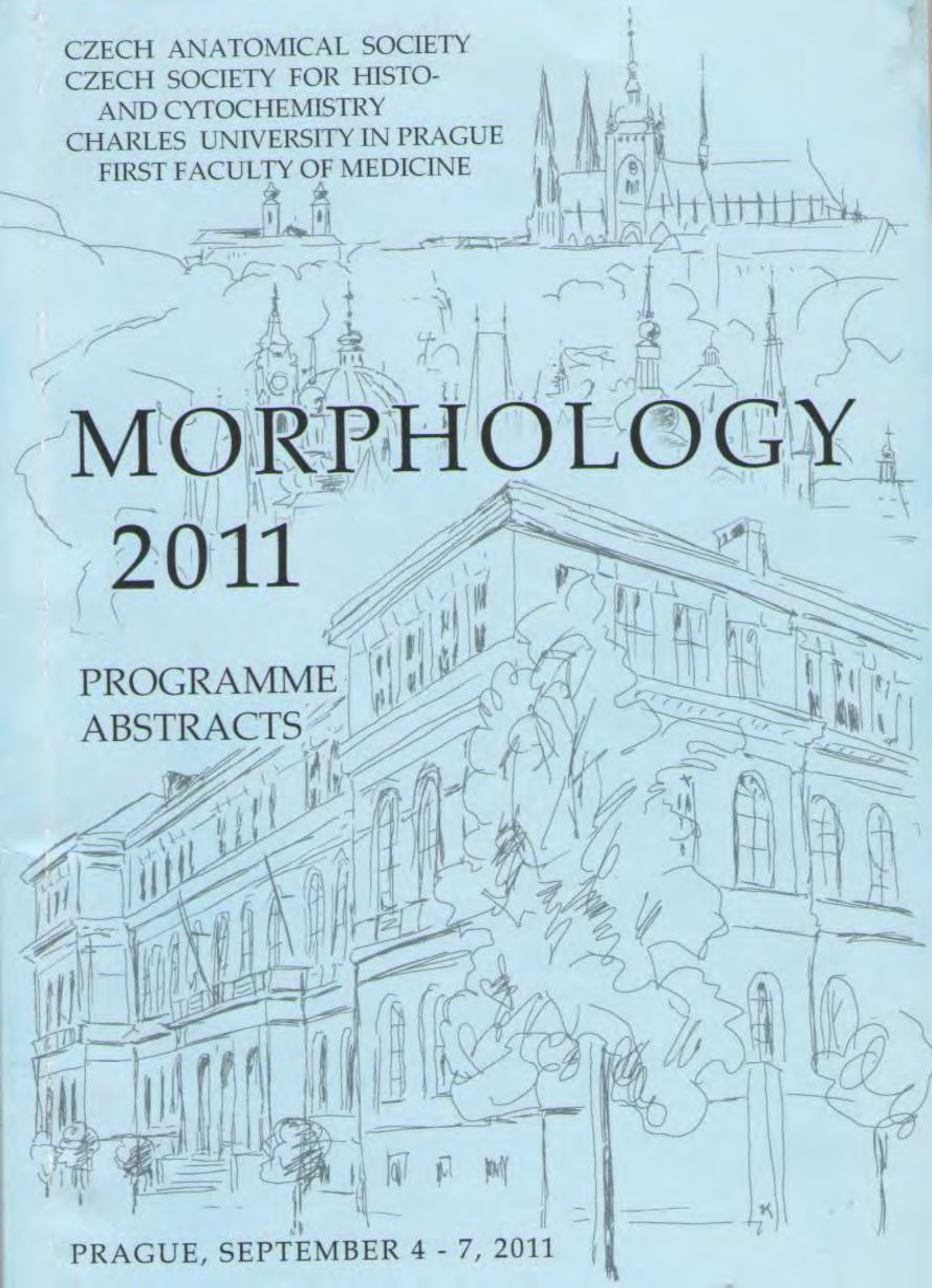

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