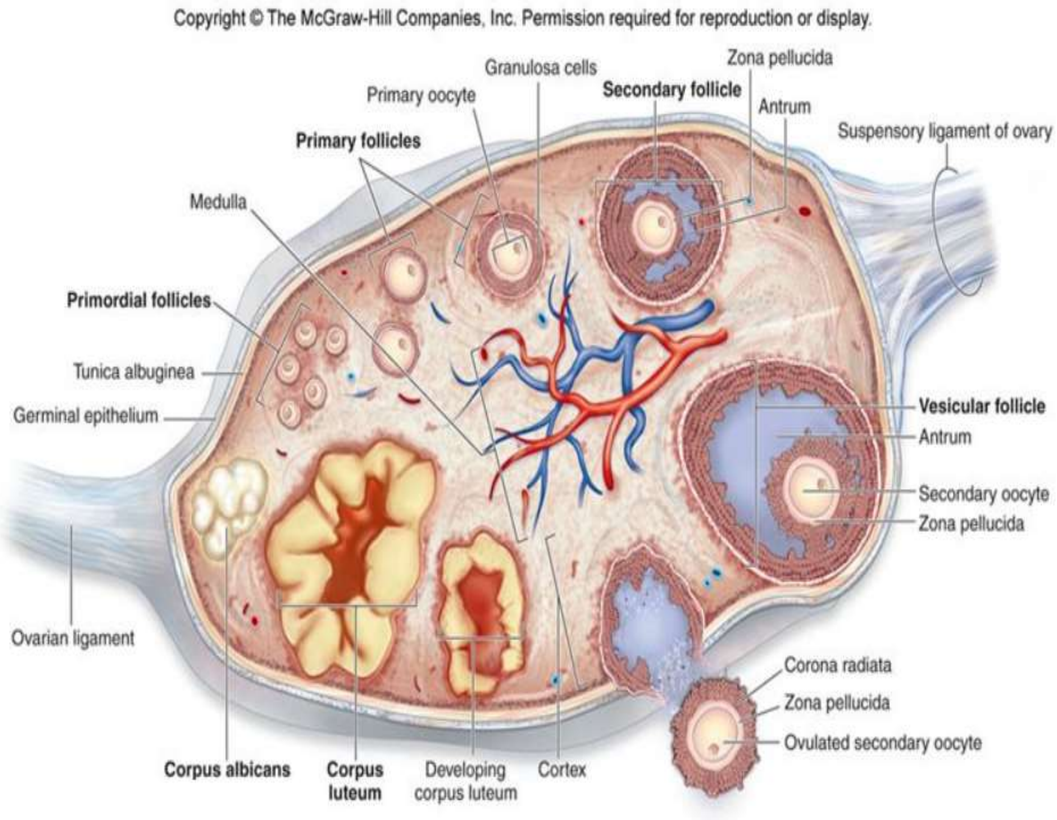
An *ex vivo* study of the kinetics of the optical properties of ovarian tissues under the influence of glycerol

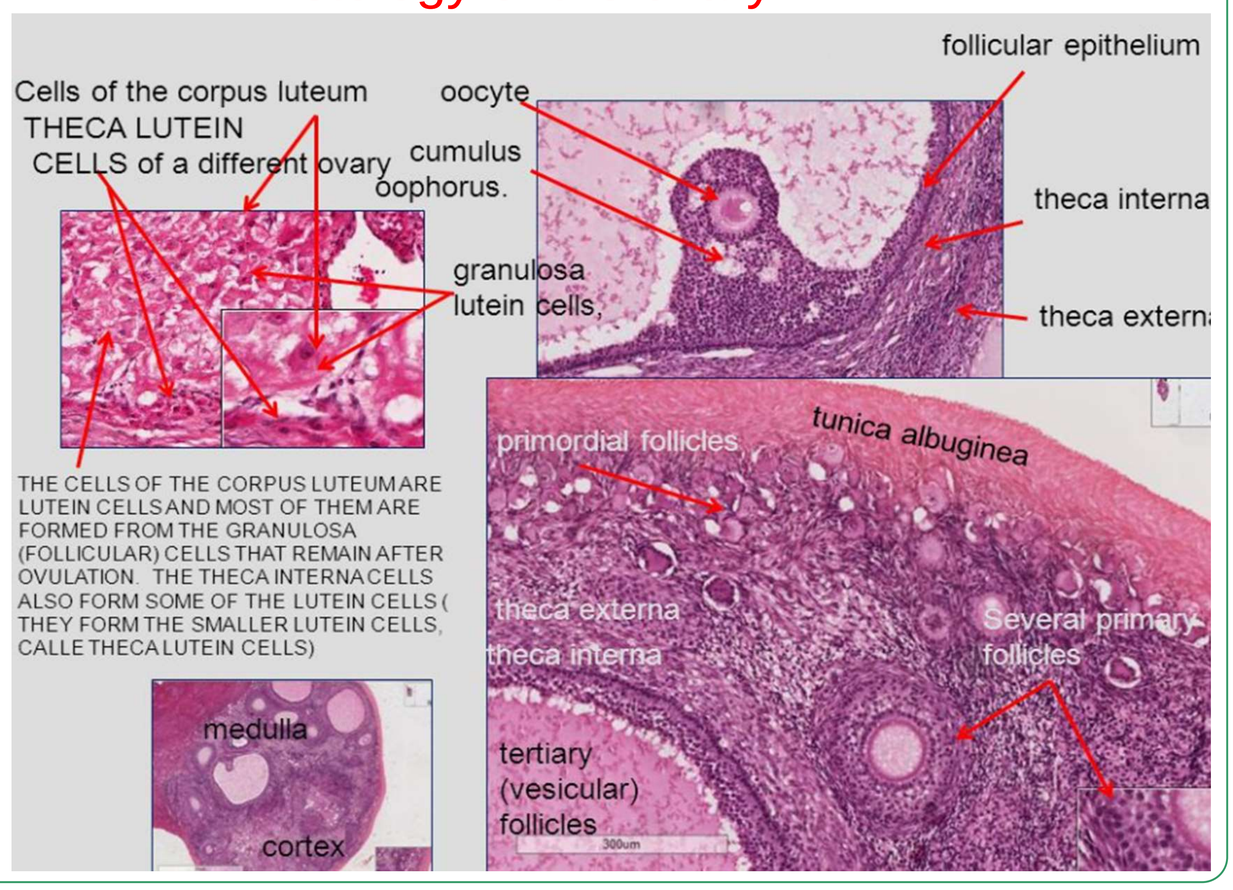
Alexey A. Selifonov [1], Andrey S. Rykhlov [2], Ekaterina I. Selifonova [1], Galina N. Varlamova [1], Valery V. Tuchin [3,4,5]

[1]Education and Research Institute of Nanostructures and Biosystems, Saratov State University, Saratov 410012, Russia
[2]Clinic "Veterinary Hospital" , Saratov State University of Genetics, Biotechnology and Engineering named after N.I. Vavilov, Saratov 410012, Russia
[3]Science Medical Center, Saratov State University, Saratov 410012, Russia
[4]Laboratory of Laser Molecular Imaging and Machine Learning, Tomsk State University, Tomsk 634050, Russia
[5]Institute of Precision Mechanics and Control, FRC "Saratov Scientific Centre of the Russian Academy of Sciences," Saratov 410028, Russia

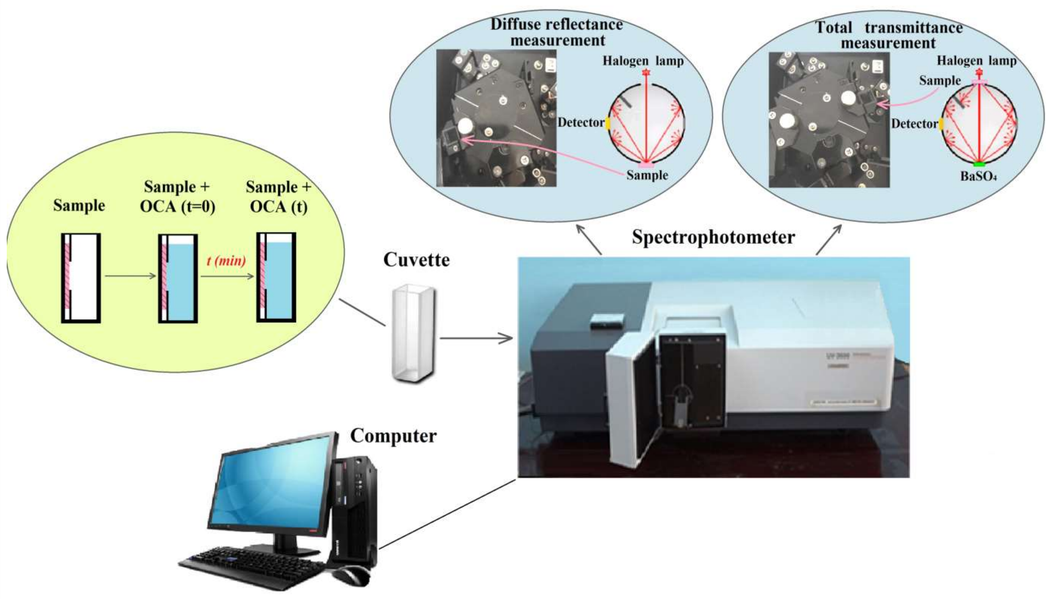
The structure of the ovary



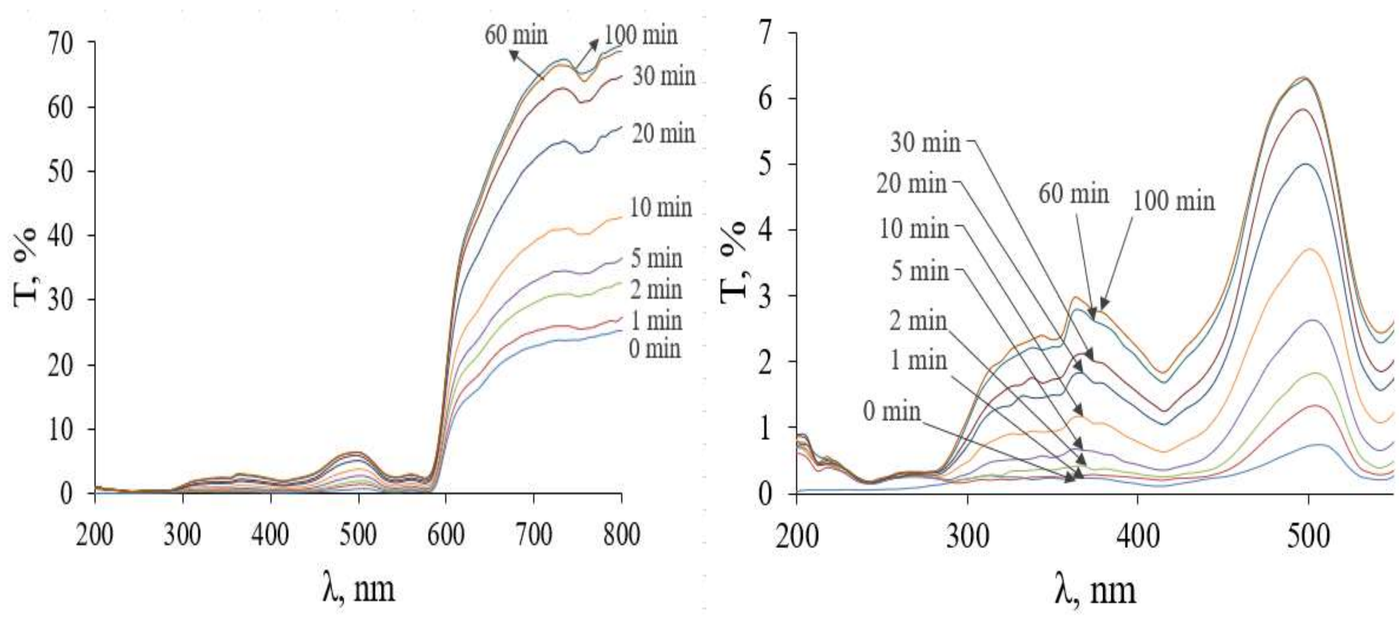
Histology of the ovary



Diffuse reflectance spectroscopy experiment layout

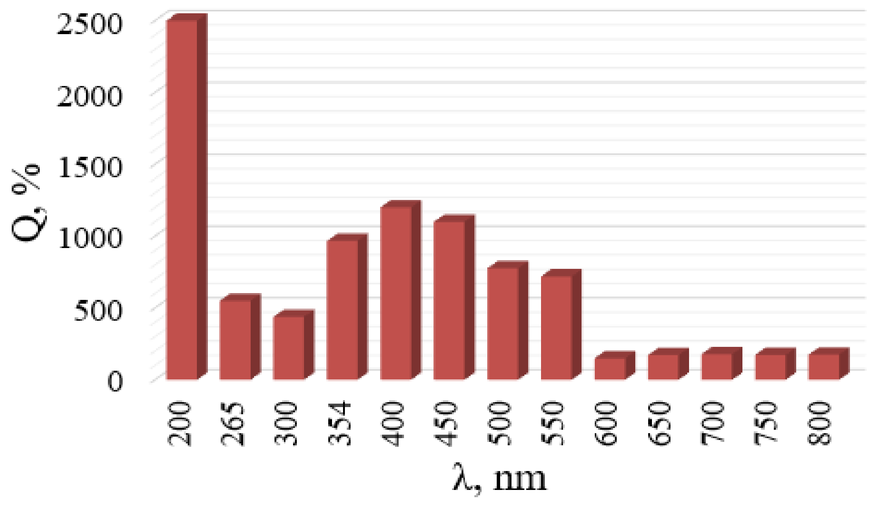


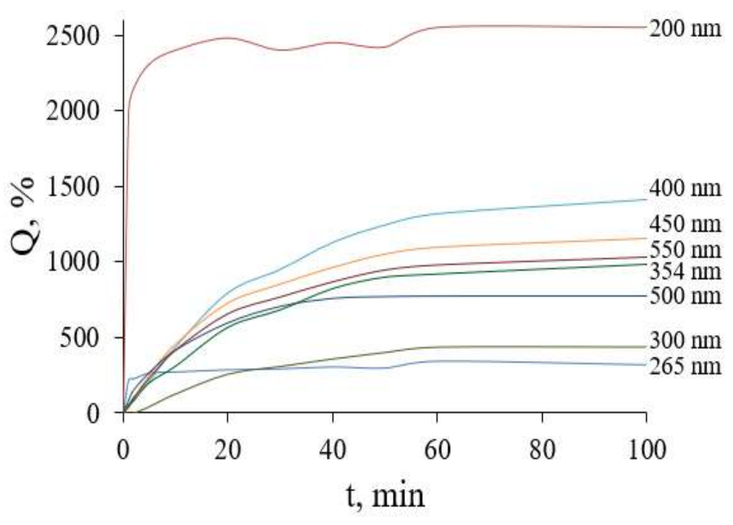
Total transmission spectra of dog ovarian tissue exposed to glycerol

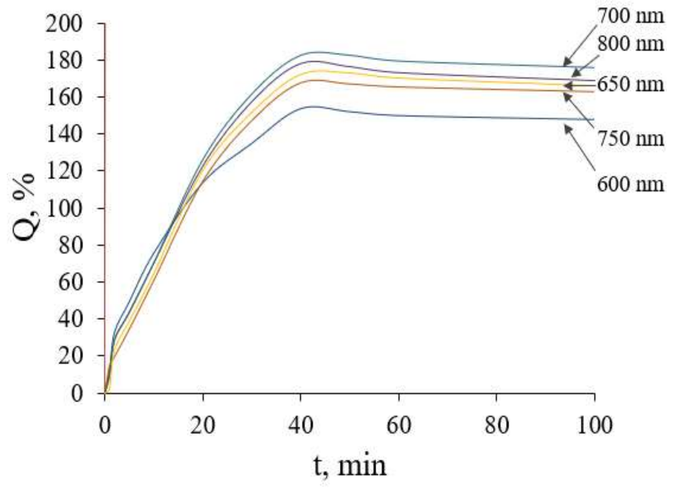


Efficiency of optical clearing of dog ovarian tissue under the influence of glycerol

$$Q, (\%) = \{T(t) - T(t=0)\} * 100/T(t=0)$$







CONCLUSIONS

- The optical properties of canine ovarian tissue were studied by the methods of diffuse transmission and reflection spectroscopy with topical application of glycerol in a wide spectral range from UV to NIR.
- The features of tissue optics with the formation of three dynamic optical windows in the UV range are revealed.
- The combination of the immersion method with UV spectroscopy allowed us to test the main mechanisms of optical clearing - tissue dehydration and refractive index matching, and also to find that the efficiency of optical clearing is much higher in the deep UV range than in the visible-near infrared range.

ACKNOWLEDGEMENTS

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