Summary

The issue of human infertility is becoming increasingly pressing, especially in so-called industrially developed countries. Formally, we can share the infertility attributes between the male and the female partner (as a male and female infertility factor), but the problem finally affects the whole parental couple. Perhaps, due to the complexity of the female reproductive tract, it is estimated that over 40% of the reproductive failure is hidden in one or more of its parts. The “strong point” of the male factor is derived from the pathological sperm count. For the remaining 15 to 20% of causes, whether morphological or functional, cannot be to find either clearly or not at all. We talk about the otherwise unexplained infertility, that can be caused in up to 30% immunologically.

Due to broad concept of immunology of reproduction, we have chosen literally as a probe into this issue in all respects unique spermatic cell that represents not only a carrier of genetic information, but also a set of antigenic structures. This cell seems to be perfect for this task, because of its availability to most basic laboratory techniques.

We will try to familiarize ourselves with some of the obstacles that may prematurely end its mission, especially with the antibodies against its antigenic structures (ASA – antisperm antibodies).

The long-term objective of our work was to understand the antigenic nature of the surface of human sperm and preparation of such protein extract from human spermatozoa, which would represent the best possible antigenic mosaic of cells as a result. This extract (or antigenic panel) would find its application especially in the diagnostics of ASA and would improve contemporary ELISA kits. It would also play an important role in further research of cellular immunity. Our main tools for handling this task are the methods of SDS-PAGE and subsequent Western blotting with immunodetection using ASA from sera of infertile men and women.

We created rational lysis protocol with results supported by other complementary studies and diversified our diagnostics of polyvalent ASA.