

Joint Event

Hematology, Immunology & Traditional Medicine

December 05-06, 2018 | Lisbon, Portugal

Unique recombinant idiotypic and anti-idiotypic antibodies against estradiol

Estradiol is an estrogen derivative. It is capable to exert pathogenic influence on hormone-dependent organs and tissues. Estradiol under certain conditions could stimulate the growth of benign and malignant tumors in the epithelium of the mammary gland, endometrium and cervix, epithelium and endothelium of mucous membranes (larynx, esophagus and rectum). The aim of this study was to obtain human single-chain idiotypic and anti-idiotypic antibodies against estradiol. A naive human phage library was screened. Seventeen (17) clones with a positive response to the estradiol-BSA conjugate were selected as a result. Four single-chain antibodies were selected after analysis of the amino acid sequences. The antibodies were unique and had no analogues. The proteins were expressed in *E.coli* and isolated. The affinity of the antibodies against estradiol was measured by plasmon resonance. The maximum binding constant was found for 119 antibodies. A naive human phage library was screened again to isolate anti-idiotypic antibodies obtained by earlier 119 antibodies. Two unique clones encoding anti-idiotypic antibodies against estradiol were selected: D2 and B3. Thus, idiotypic and anti-idiotypic antibodies against estradiol were obtained and characterized. The test systems could be developed to diagnose various forms of cancer based on these antibodies.

Biography

Kristina V Polunina is presently pursuing her MSc in Genetics from Federal State Educational Institute of Higher Professional Education, Kemerovo State University, Kemerovo, Russia. She is the Research Specialist of Federal State Scientific Institute, Federal Research Centre Coal and Coal Chemistry, Siberian Branch of the Russian Academy of Sciences, Institute of Human Ecology, Kemerovo, 650065, Russia. She has published a paper in the Journal of *Immunoassay and Immunochemistry* and made her presentations on seven international immunological meetings.

arnstkv@ihe.sbras.ru

Kristina V Polunina

Federal State Scientific Institute- FRC
CCC- SB RAS, Russia

Co-Authors

**Anna V Ostapceva, Artem E
Studennikov, Andrey N Glushkov and
Valentin A Ustinov**

Federal State Scientific Institute- FRC CCC- SB RAS,
Russia

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