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Grant of the Government of the Russian Federation for the state support of scientific researches, which are conducted under the guidance of leading scientists in Russian educational institutions of higher professional education (agreement No. 11.G34.31.0065 dated October 19, 2011)



# Regeneration of airways and lung

The official website of the project "Investigating the molecular mechanisms and underlying pathways of regenerative medicine approaches the tissue-engineering and cell therapy of airways and lungs"

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The patients were discharged after first bioartificial stem-cell based laryngo-tracheal transplantation

Two patients were discharged from Krasnodar Clinical Hospital on the 14th of July, 2012, after successful first bioartificial stem-cell based laryngo-tracheal transplantation performed by Paolo Macchiarini, Professor of Regenerative Medicine of Karolinska Institute (Sweden) and Vladimir Porhanov, head of oncological and thoracic department of Kuban State Medical University (Russia).

Julia Tuulik, 33 years old mother of one child from Saint-Petersburg, and Alexander Zozulya, 28, from Rostov Region, both suffered from a narrowing of the laryngo-tracheal junction for which they already had a failed previous surgeries. Both are the victims of motorcar accidents more than 2 years ago. Transplantation was the last resource for the patients to breath and speak normally and get a normal quality of life. Immediately after transplantation they were able to speak and breath. Now, 3 weeks after, they recovered completely.

Lab tests (flow cytometry) shows the increased level of circulating

progenitor cells. Progenitor cells were mobilized with pharmacological intervention to boost the generation of the implanted grafts. There was also observed (cytology) the appearance of metaplasia epithelium in the anastomosis.

"These are the best results, I've got so far after 15 transplantations using donor's and artificial scaffolds", Paolo Macchiarini told to the journalists.

Julia returned to Saint Petersburg to her family. Before leaving the hospital she thanked Professor Macchiarini and all team and sheared her plans: "I am going to spend more time with my child first, may be we'll have a little trip, and then, in September, to start new studies. It's a secret, but I'll make a lot of changes in my life".

Both Julia and Alexander told about their experience with two new candidates for transplantation who have now necessary observations at the Krasnodar Clinical Hospital.

The first bioartificial stem-cell based laryngo-tracheal transplantations were performed on June 19th and 21st at the Krasnodar Regional Hospital (Russia) by Paolo MACCHIARINI, professor of regenerative surgery at the Karolinska Institute (Sweden, Stockholm), and colleagues.

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