European Respiratory Society
Annual Congress 2013

Abstract Number: 3712

Publication Number: P4484

Abstract Group: 11.1. Lung Cancer

Keyword 1: Lung cancer / Oncology **Keyword 2:** Experimental approaches **Keyword 3:** Treatments

Title: Interleukin 27 (IL27) as a novel therapeutic tool in lung cancer immune therapy

Mr. Tomasz 22753 Wandtke tomasz_wandtke@wp.pl [1], Dr. Marek 22754 Jankowski yangcy@poczta.onet.pl MD [1], Mrs. Ewelina 22755 Wedrowska ewli@poczta.fm [1], Mrs. Karina 22756 Szablowska kiab7@poczta.onet.pl [1], Mrs. Joanna 22757 Golinska joanna.golinska@gmail.com [1], Ms. Joanna 22758 Wielikdzien wielikdzien.j@gmail.com [1], Prof. Dr Janusz 22760 Kowalewski kowalewskij@co.bydgoszcz.pl MD [2] and Dr. Piotr 22762 Kopinski mpkopins@hotmail.com MD [1]. [1] Gene Therapy, Collegium Medicum, Nicolaus Copernicus University, Bydgoszcz, Poland, 85-094 and [2] Chest and Tumor Surgery, Collegium Medicum, Nicolaus Copernicus University, Bydgoszcz, Poland, 85-796 .

Body: Introduction: IL27 is a cytokine secreted by antigen presenting cells and responsible mainly for the Th1 immune polarization and cytotoxic response. Because of its properties, IL27 may be a potential therapeutic tool for lung cancer immune therapy. Previously we constructed a plasmid encoding IL27 (pXMs-IL27). Aim: To evaluate a clinical potential of pXMs-IL27 as a therapeutic tool applied to human small- (H82) and non-small (A549) cell lung cancer lines. Materials and Methods: The expression of IL27 was performed by cell lines (A549 and H82) transfection with a pXMs-IL27 and empty control plasmid. Transfection efficacy was proved by RT-PCR and anti-IL27 indirect immunostaining. Additionally, the expression of CD80, CD83, CD86, CD120a, CD120b, CD178 molecules after transfection with plasmids was studied by direct immunofluorescence and analyzed by flow cytometry. Results: RT-PCR and flow cytometry confirmed the expression of IL27 in transfected cells (A549: 79%; H82: 56%, median of 5 experiments). With use of flow cytometry the baseline expression of IL27 was found in both cell lung cancer lines, particularly in A549 (40%). Tumor cells transfected with pXMs-IL27 plasmid showed in microscopic observations intense apoptosis, as compared with empty plasmid control. Conclusions: Cell lines were successfully transfected with pXMs-IL27 plasmid. Phenotypic changes and increased apoptosis rate in transfected cells suggest that IL27 will be useful in future immune therapy of lung cancer.