Periostin – a new candidate for a biomarker in CKD progression

Radka Macova[1], Kristina Jakic[1], Veronika Nemethova[3], Filip Razga[3], Petra Mazancova[3], Lucia Uhelska[3], Boglarka Teglasova[3], Zuzana Zilinska[4], Martin Chrastina[4], Michal Selc[1,2], Andrea Babelova[1,2]

[1]Biomedical Research Center, Slovak Academy of Sciences, Bratislava, Slovak Republic
[2]Centre for Advanced Material Application, Slovak Academy of Sciences, Bratislava, Slovak Republic
[3]Selecta Biotech SE, Bratislava, Slovak Republic
[4]Department of Urology with Kidney Transplant Centre, University Hospital Bratislava, Bratislava, Slovak Republic
andrea.babelova@savba.sk

Chronic kidney disease (CKD) belongs to a major public health problem, which increased by approximately about 30% in the last decades [1]. Due to the tight connection between renal and cardiovascular systems, renal insufficiency importantly contributes to cardiovascular disease [2]. In combination with cardiovascular complications CKD results in premature mortality before the life-saving transplantation [3]. Therefore, early identification of the processes that likely progress to complete loss of kidney function has become increasingly important. A pathological feature and manifestation of CKD is renal fibrosis. Efforts have been made to identify novel targets associated with renal fibrosis development. One such marker is periostin. It has been observed that periostin expression is absent in a healthy adult kidney and is triggered de novo in case of kidney injury. In our study, we chose a murine model of unilateral ureteral obstruction (UUO) to investigate the role of periostin in the renal fibrotic process. UUO is a well-characterized model of renal fibrogenesis and after 3, 7, 14, and 21 days of UUO, mRNA and protein expression of periostin will be estimated together with known markers of fibrotic progress like fibronectin, collagen, α-SMA, etc. We will use histological and immunohistological analyses to detect periostin localization in the renal tissue and link it to the estimated fibrosis grade.

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