

Publication

Antibody response to BK polyomavirus as a prognostic biomarker and potential therapeutic target in prostate cancer

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4390941**Author(s)** Keller, Xavier E.; Kardas, Piotr; Acevedo, Claudio; Sais, Giovanni; Poyet, Cédric; Banzola, Irina; Mortezaei, Ashkan; Seifert, Burkhardt; Sulser, Tullio; Hirsch, Hans H.; Provenzano, Maurizio**Author(s) at UniBasel** [Hirsch, Hans H.](#) ;**Year** 2015**Title** Antibody response to BK polyomavirus as a prognostic biomarker and potential therapeutic target in prostate cancer**Journal** Oncotarget**Volume** 6**Number** 8**Pages / Article-Number** 6459-69**Keywords** Antibody Formation; BK Virus/*immunology; Humans; Male; Middle Aged; Polyomavirus Infections/*immunology; Prognosis; Prospective Studies; Prostatic Neoplasms/*immunology/pathology/*virology; BK polyomavirus; antibody response; biochemical recurrence; prostate cancer**Mesh terms** Antibody Formation; BK Virus, immunology; Humans; Male; Middle Aged; Polyomavirus Infections, immunology; Prognosis; Prospective Studies; Prostatic Neoplasms, virology

Infectious agents, including the BK polyomavirus (BKPyV), have been proposed as important inflammatory pathogens in prostate cancer. Here, we evaluated whether the preoperative antibody response to BKPyV large T antigen (LTag) and viral capsid protein 1 (VP1) was associated with the risk of biochemical recurrence in 226 patients undergoing radical prostatectomy for primary prostate cancer. Essentially, the multivariate Cox regression analysis revealed that preoperative seropositivity to BKPyV LTag significantly reduced the risk of biochemical recurrence, independently of established predictors of biochemical recurrence such as tumor stage, Gleason score and surgical margin status. The predictive accuracy of the regression model was denotatively increased by the inclusion of the BKPyV LTag serostatus. In contrast, the VP1 serostatus was of no prognostic value. Finally, the BKPyV LTag serostatus was associated with a peculiar cytokine gene expression profile upon assessment of the cellular immune response elicited by LTag. Taken together, our findings suggest that the BKPyV LTag serology may serve as a prognostic factor in prostate cancer. If validated in additional studies, this biomarker may allow for better treatment decisions after radical prostatectomy. Finally, the favorable outcome of LTag seropositive patients may provide a potential opportunity for novel therapeutic approaches targeting a viral antigen.

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