

## **Spontaneous T lymphocyte responses to a widespread endogenous antigen in a transgenic mouse prostate cancer model**

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Male transgenic adenocarcinoma of mouse prostate (TRAMP) mice express SV40 T antigen under the control of a prostate-specific promoter, resulting in the development of spontaneous adenocarcinoma by 14-20 weeks of age. In a screen for endogenous tumor-reactive T cell responses in the TRAMP model, we identified a novel infiltrating CD8 $\alpha\beta$ <sup>+</sup> T cell population that is consistently overrepresented in TRAMP prostate tumors. To facilitate the study of this T cell population and to define its contribution to tumor immunity or tolerance, we generated clonotypic TCR $\beta$  and TCR $\alpha\beta$  transgenic mice, and are currently characterizing the phenotype and function (effector or suppressor) of clonotypic T cells in the prostate tumors of TRAMP, TRAMP x TCR $\beta$ , and TRAMP x TCR $\alpha\beta$  transgenic mice. In efforts to characterize the antigen driving this response, we found that clonotypic T cells could be stimulated *in vitro* using HPLC-purified extracts from primary TRAMP prostate tumors. Surprisingly, the stimulatory peptide was also found in the spleen, liver, lung, bone marrow, and thymus of male TRAMP mice, indicating that the antigen is widespread. In addition, the stimulatory peptide was also found in wild-type male and female B6 mice, indicating that the peptide is a non-mutated self antigen. Currently, 2-D HPLC purification and tandem mass spectrometry are being employed to isolate and identify the antigenic peptide. In sum, here we outline the discovery of a spontaneous CD8 $\alpha\beta$ <sup>+</sup> T cell response directed at a widespread self antigen in a transgenic mouse prostate cancer model. Characterization of this model will provide insight into the role of T lymphocytes in tumor immunity, and will facilitate the design of new and improved immunomodulatory therapies for the treatment of human cancer.