**Pseudocowpox virus (PCPV), a potent viral vector for both antigen-dependent and independent cancer immunotherapy**

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**BACKGROUND**

Viral vectors expressing tumor antigens and/or cytokines have proven to be clinically effective approaches to stimulate anti-tumor immunity and to cytokine the tumor microenvironment. However, novel viral strains with improved immunogenic properties would be beneficial to expand the scope of virotherapeutic approaches. We identified Pseudocowpox virus (PCPV) from a Poxviridae screening program. Compared to well-established poxvirus strains like MVA or oncolytic Vaccinia virus (VACV), PCPV induced the secretion of 1,000-fold more IFN-alpha in human PBMCs. PCPV treatment induced efficient activation of antigen-presenting cells, and a less suppressive phenotype in *in vitro* derived M2-like macrophages and MDCs [see AACR 2018, poster LB-287]. A recombinant PCPV encoding the tumor associated antigen (TAA) HPV16E7 was generated to assess the anti-tumor activity in the syngeneic murine tumor models MC38 (HPV16E7) and TC1 (HPV16E7*).

**CONCLUSIONS AND PERSPECTIVES**

Our recent data confirm the potential of PCPV as a new vector for anti-tumor vaccination, in particular for its intrinsic ability to control tumor growth in a tumor antigen-independent manner. Heterologous prime boost regimen with our individualized vaccine approach myVac or combination with oncolytic virotherapy can be envisaged. Detailed studies in the human immune cells from patients are ongoing to dissect effects of PCPV on immunosuppressive and immunostimulating cell populations. Patent application filed.