**ABSTRACT**

Vaccinia virus (VV) has proven to be a powerful oncolytic vector thanks to its large spectrum of tumor cell targets, large genome capacity, good safety profile, and strong immunogenic properties. Several advantages are offered when combining VV with non-viral strategies, in particular, using checkpoint inhibitors to boost the immune response locally by secreting additional cytokines, at the site of active viral replication and accumulation, i.e., directly in the tumor. Thus, checkpoint blockers can be targeted to boost the immune response locally.

**RESULTS**

1. ICI combination with oncolytic VV improved the anti-tumoral efficacy

![ combination with Anti-CTLA4](image)

2. The purified vectorized mAb1, Fab1, scFv are functional

![purified vectorized mAb1, Fab1, scFv](image)

3. Vectorial approach allows the accumulation of anti-mPD1 into the tumor with low systemic exposure

![vectorial approach](image)

4. Tumor/Serum ratio of mAb demonstrate the tumor accumulation only in case of vectorization

![tumor/s serum ratio](image)

5. Vaccinia virus induces a massive immune infiltration into the tumor

![vaccinia virus infiltration](image)

6. Two vectorial formats of anti-PD1 inhibit tumor growth with equivalent efficacy to combination of WR "empty" + 3x250µg of anti-PD1

![two vectorial formats](image)