Novel Antibody Therapeutics Targeting Senescent Cells for Cancer and Fibrotic Disease Treatment

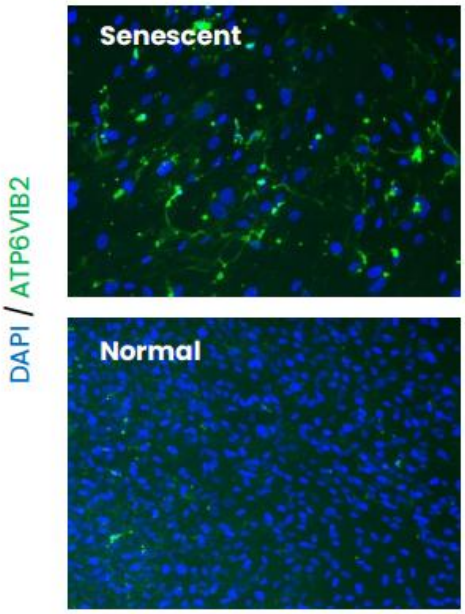
Therapeutics

Reference Number: **2158** \ Principal Investigator: **Prof. Valery Krizhanovsky** \ Patent Status: **US-2025-0136708-A1, US-2023-0094083A1**

Senescent cells play a dual role in cancer and fibrosis, where their persistent presence can drive chronic inflammation, tissue remodeling, and disease progression.

We developed human antibodies targeting two novel senescence-specific proteins, GRP94 and ATP6V1B2, which translocate to the cell surface upon senescence.

These antibodies can be further developed as ADCs or bispecifics to enable the selective elimination of senescent cells in cancer and fibrotic diseases.



ATP6V1B2 surface localization in senescent human fibroblasts

APPLICATIONS

- Development as ADCs, BiTEs, or bispecifics for targeted senescent cell elimination
- Anti-cancer therapy targeting residual senescent tumor cells
- Treatment of fibrotic diseases, including renal, hepatic, and pulmonary fibrosis

DEVELOPMENT STAGE

- Selective surface expression validated in cancer and fibrosis models
- Human antibodies against GRP94 and ATP6V1B2 fully developed and characterized
- Killing of senescent tumor cells demonstrated using an ADC

DIFFERENTIATION

Novel targets identified by a proprietary senescent cells surface proteins discovery platform

Highly selective surface expression on senescent cells

Potential for prolonged tumor response due to elimination of residual cancer cells

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