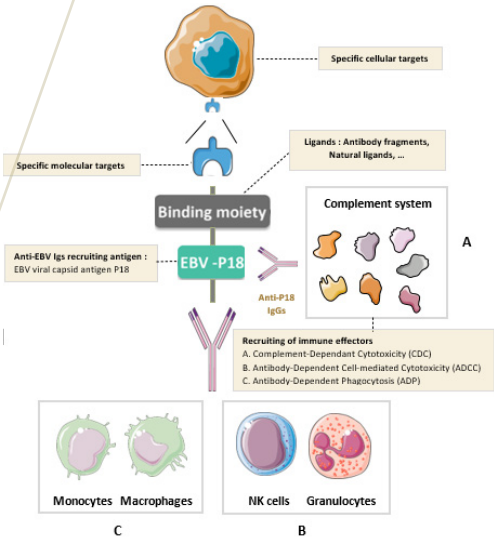
NANOCURE

Use of an Epstein Barr Virus (EBV) antigen to redirect a pre-existing immune response against EBV towards pathogenic targets in several diseases.

ERGANEO
L'AVENIR EST FAIT D'AUDACE

PRESENTATION

98 % of the human population is chronically infected by EBV. We propose an innovative platform for engineering immunogenic bi-modular fusion proteins comprising a binding moiety and an EBV antigen to redirect an EBV pre-existing immune response towards a select cellular target. The aim is to develop efficient therapies triggering immune mechanisms such as Complement-Dependent Cytotoxicity (CDC), Antibody-Dependent Cell-mediated Cytotoxicity (ADCC) and Antibody- Dependent Phagocytosis (ADP) to combat pathogens or treat pathologies such as cancer.



Epstein-Barr Virus - Therapeutic molecular engineering - Antibody fragments - Nanobodies - Immune effectors - Cellular cytotoxicity / complement activation

COMPETITIVE ADVANTAGES

- Applicable for 98 % of the population.
- Easy to produce as compared to current therapies such as monoclonal antibodies.
- Triggering of multiple immune effectors due to the recruitment of polyclonal antibodies.
- Allow efficacy improvement of current therapeutic antibodies.
- Versatile platform allowing large scale screening of binding moieties.
- Multiple applications (treatment of a large panel of diseases).

APPLICATIONS

- Treatment of cancers (such as B-cell lymphomas)
- Treatment of infectious diseases (such as malaria)

INTELLECTUAL PROPERTY

Patent application filed on June 2017

DEVELOPMENT PHASE

- ☑ TRL 3 / Infectious disease (malaria) and cancer (B lymphoma) models have revealed that bi-modular constructs respectively targeting P. falciparum-infected erythrocytes and malignant B cells were able to trigger CDC, ADCC and ADP leading to pathogenic cell clearance.
- ☑ Furthermore, in vivo experiments performed in a mouse tumor model, showed that treatment with a bi-modular construct specifically targeting B cells was able to significantly decrease tumor progression and promote cancer remission in mice.

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