

*Title: Development of a bispecific nanobody tethering cytotoxic T lymphocytes to HIV-infected cells as an HIV cure strategy*

Currently, over 37.3 million people are living with HIV and already 36.3 million people lost their lives to HIV. In 2020, 680 000 people died from HIV-related causes and 1.5 million people acquired HIV, indicating that it is still an uncontrolled epidemic. HIV-infected individuals must take lifelong and daily medication to prevent disease progression. This lifelong treatment has a significant economic burden on the health care system and often causes financial difficulties within households with HIV-infected individuals due to the high costs associated with the treatment. Moreover, the global HIV treatment coverage rate was 73% in 2020, demonstrating that millions of people still have no access to appropriate medication due to an unequal distribution between high- and low-income countries. Effective HIV treatment that is accessible to all will decrease the economic burden, avert new HIV infections, ensure the quality of life of people living with HIV and end the HIV epidemic as a global public threat. To date, people living with HIV experience a lot of discrimination and stigma. Providing them with an effective treatment will eliminate HIV-related discriminatory laws, regulations and policies. Currently, HIV-infected individuals cannot donate blood or plasma. Eliminating HIV would give these people a chance to donate blood and would help reduce current blood shortages. Further investments in achieving an effective HIV treatment could also have a significant impact on the treatment of other global health threats such as hepatitis, tuberculosis, and cancers.

*Student: Aliona Debisschop*

*Promotor: Sarah Gerlo*