

# SuperFolder CD19 for detection of CAR-T cells

The CAR-T cell therapy is a personalized and highly potent anti-cancer treatment that uses the patient's own immune system to attack cancer cells. However, CAR-T cells are difficult to monitor in a patient, complicating an assessment of their expansion and function *in vivo*. We have developed an easy solution to study leukemia- and lymphoma-specific CAR-T cells in patient samples, as well as in laboratory experiments.

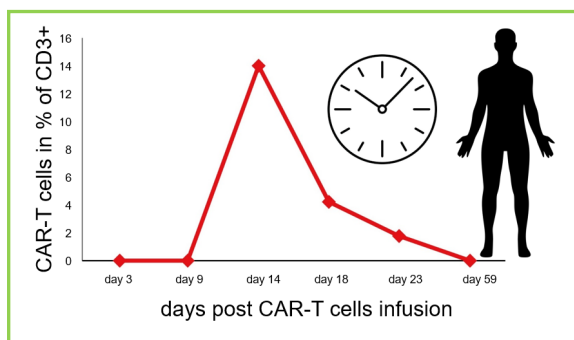
## BACKGROUND

Approved CAR-T cell therapies target the B cell surface marker CD19. Since CAR-T cells act as a "living drug" within the patient, it is imperative to monitor their expansion, persistence and function. For optimal monitoring and diagnostics, the specifically recognized CAR antigen (i.e., CD19) represents the perfect staining reagent for CAR-T cells. However, CD19 is classified as a "difficult-to-express" protein that is prone to aggregation and misfolding, representing a major obstacle for the development and analysis of CD19-targeted therapeutics.

## TECHNOLOGY

We engineered stabilized CD19 variants, called SuperFolder CD19, which are well-folded and easy to produce in large quantities. Importantly, in contrast to the misfolded and aggregated wild type protein, our final SuperFolder CD19 candidate enables the monitoring and phenotypic characterization of CAR-T cells in the blood of cancer patients using flow cytometry.

Thus, the SuperFolder CD19 is a valuable tool in clinical settings to immediately assess a patient's treatment using standard flow cytometry instruments and to make early and better informed decisions for that patient's continued care.



Monitoring the persistence of CAR-T cells

The SuperFolder CD19 has proven to efficiently detect CAR-T cells in patients' blood samples.

**REFERENCE:**  
2018-24

**AVAILABLE FOR:**  
R&D cooperation  
License agreement

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CAR-T cells, CD19, Diagnostics, Protein engineering

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**INVENTORS:**  
LOBNER Elisabeth  
TRAXLMAYR Michael  
KUNERT Renate

## CONTACT:

**Lisa-Ariadne Schmidt**  
Research Support, Innovation  
& Technology Transfer  
Vienna, Austria  
T: +43 1 47654 33034  
[lisa.schmidt@boku.ac.at](mailto:lisa.schmidt@boku.ac.at)

## BENEFITS

- SuperFolder CD19 is fully functional & highly stable
- Monitoring of CAR-T cells in patient samples
- Analysis of CAR-T cell subtypes and their activation/exhaustion
- Assessment tool for CAR-T cell efficacy