

# Characteristics of peripheral blood mononuclear cells of injecting drug users

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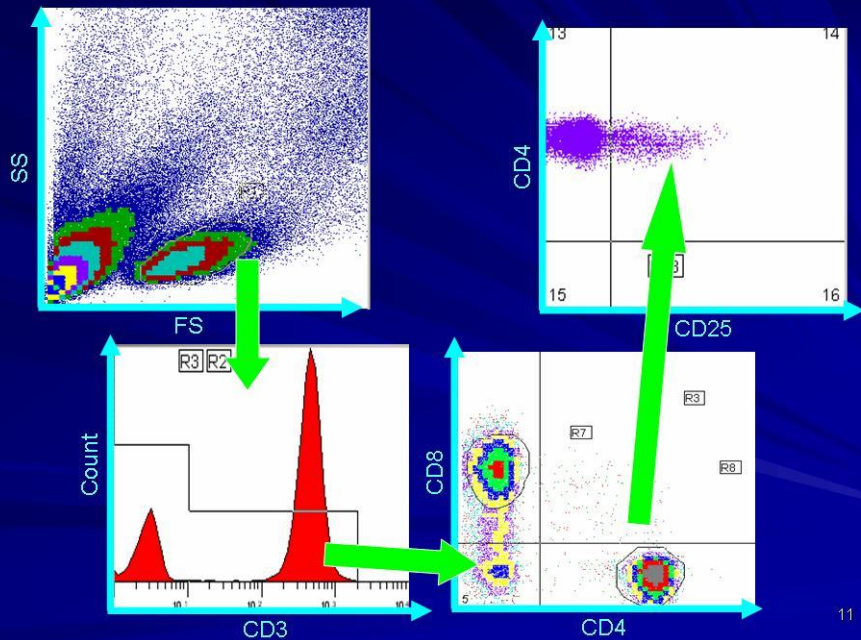
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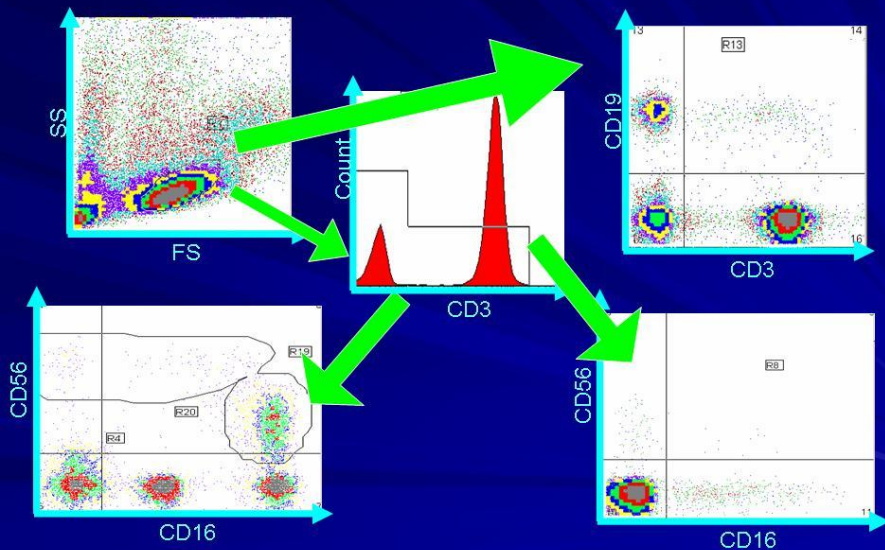
# Background

- Cryopreservation has become a standard procedure that allows phenotypic and functional analysis of large batches of patient samples in cohort studies.
- However, cryopreservation potentially induces significant changes in the cell viability, in cytokine production and in the surface markers of peripheral blood mononuclear cells PBMC, which may also alter the efficiency of T cell stimuli.
- IDU route of transmission remains a major driver of the Russian HIV epidemic. IDUs will be involved in clinical trials of DNA vaccine against HIV conducted in the Biomedical Center. Injection drug use leads to chronic organism intoxication that causes a system-wide exhaustion and pathological changes of organs.
- There is a question how PBMC of drug addicted persons will survive cryopreservation. The goal of this project is to create standard operation procedures for IDUs PBMC isolation, cryopreservation and thawing.

## Representation of surface markers CD3, CD4, CD8, CD25



## Representation of surface markers CD3, CD16, CD19, CD56



# Methods

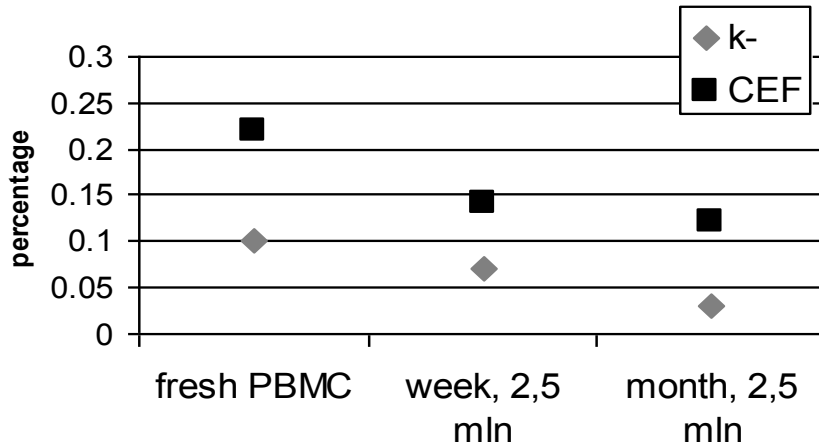
- PBMC are isolated by density gradient centrifugation on ficoll-paque. Standard techniques developed for the healthy donors cells are used for IDUs PBMC cryopreservation.
- For representation of surface markers and intracellular cytokines flow cytometric assay is used.
- To measure secretion of IFN $\gamma$  in response to CMV stimulation Intracellular cytokine staining (ICS) was used.



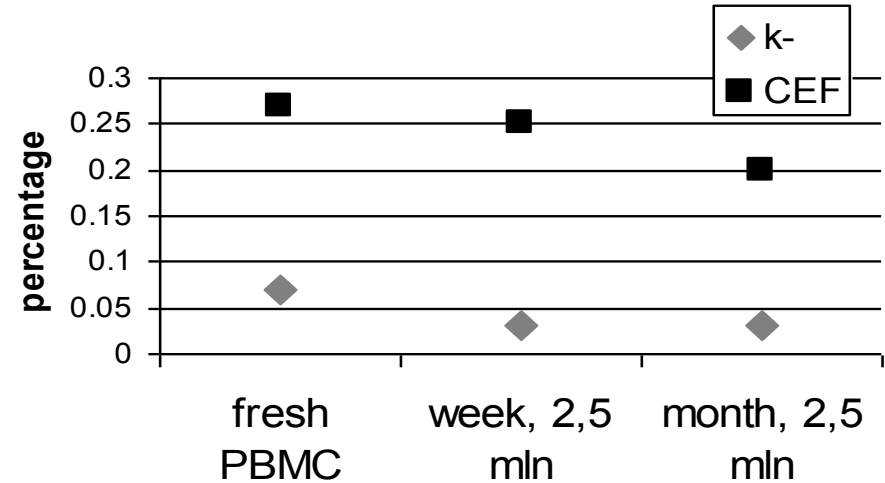


# Conclusion

Sample k256. Portion of CD3+CD8+ cells, producing IFN $\gamma$  after stimulation with CEF pool.



Sample k499. Portion of CD3+CD8+ cells, producing IFN $\gamma$  after stimulation with CEF pool.



- It was concluded that injecting drug use does not affect the immunological characteristics of the PBMC in fresh and cryopreserved samples.