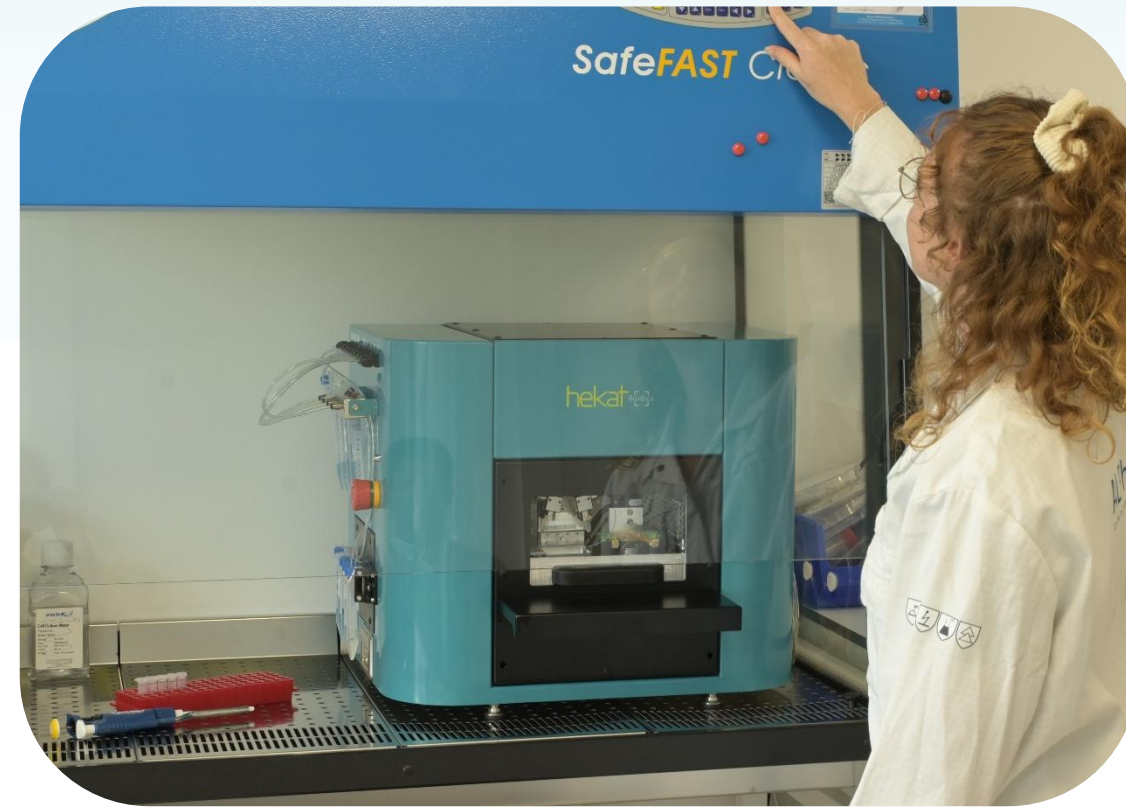
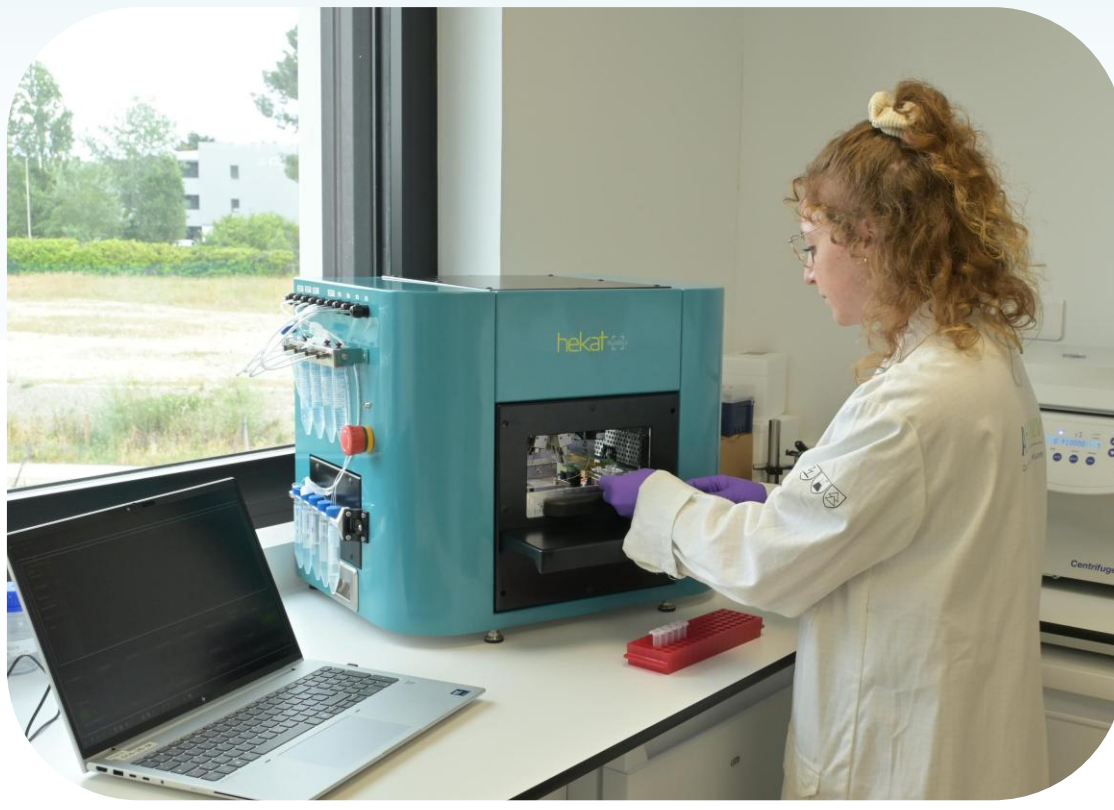


HEKAT NanoSorter®

Nanoscale Analysis and Sorting

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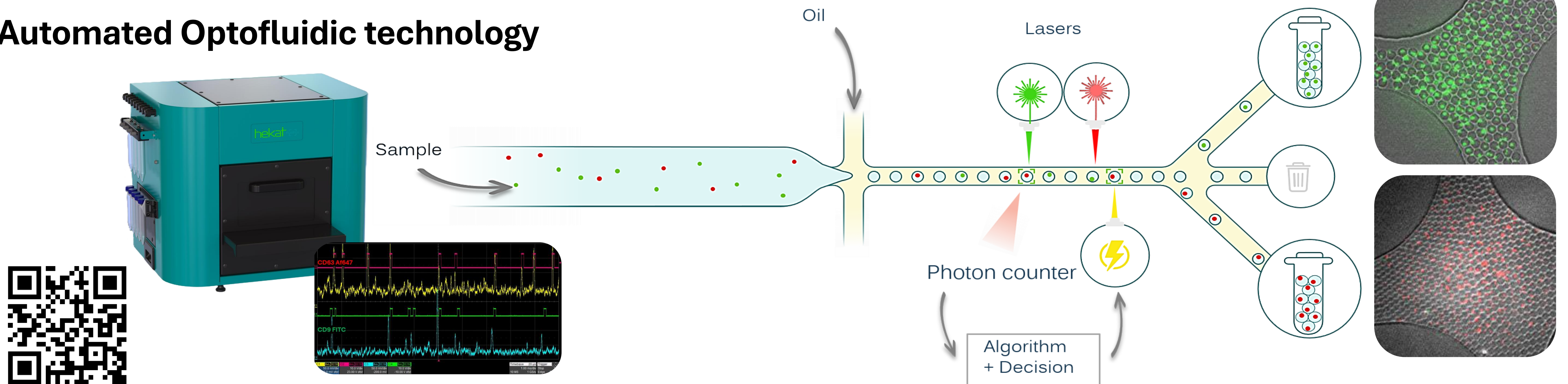
¹BRIC, Uni. Bordeaux, France, Team Billotet, ²CRCI2NA, Uni. Nantes, France, CRCI2NA, EVICAT, Team Van Niel, ³HEKAT fluidics, France



- Counting and Sorting of **single nano-objects**
- Two lasers (**488 and 633 nm**)
- Micro-volume sample partitioning (**40fL**)
- High Rate (**up to 50kHz**)
- Single and dual-color **detection**
- Post-sorting secondary uses

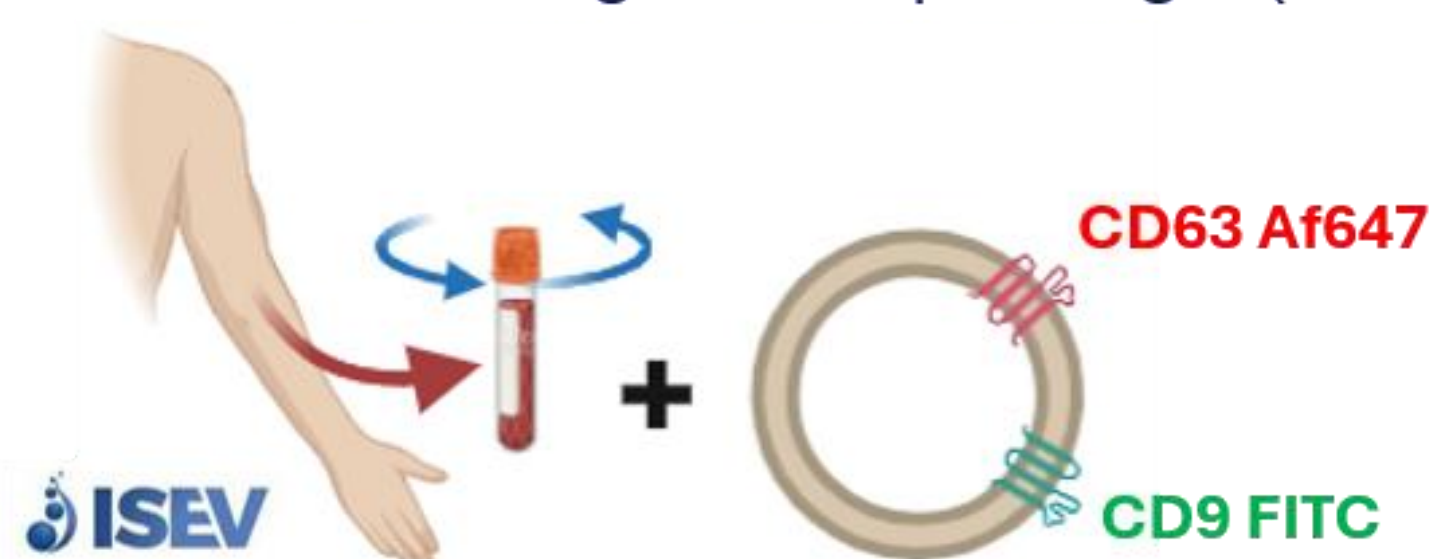


Automated Optofluidic technology

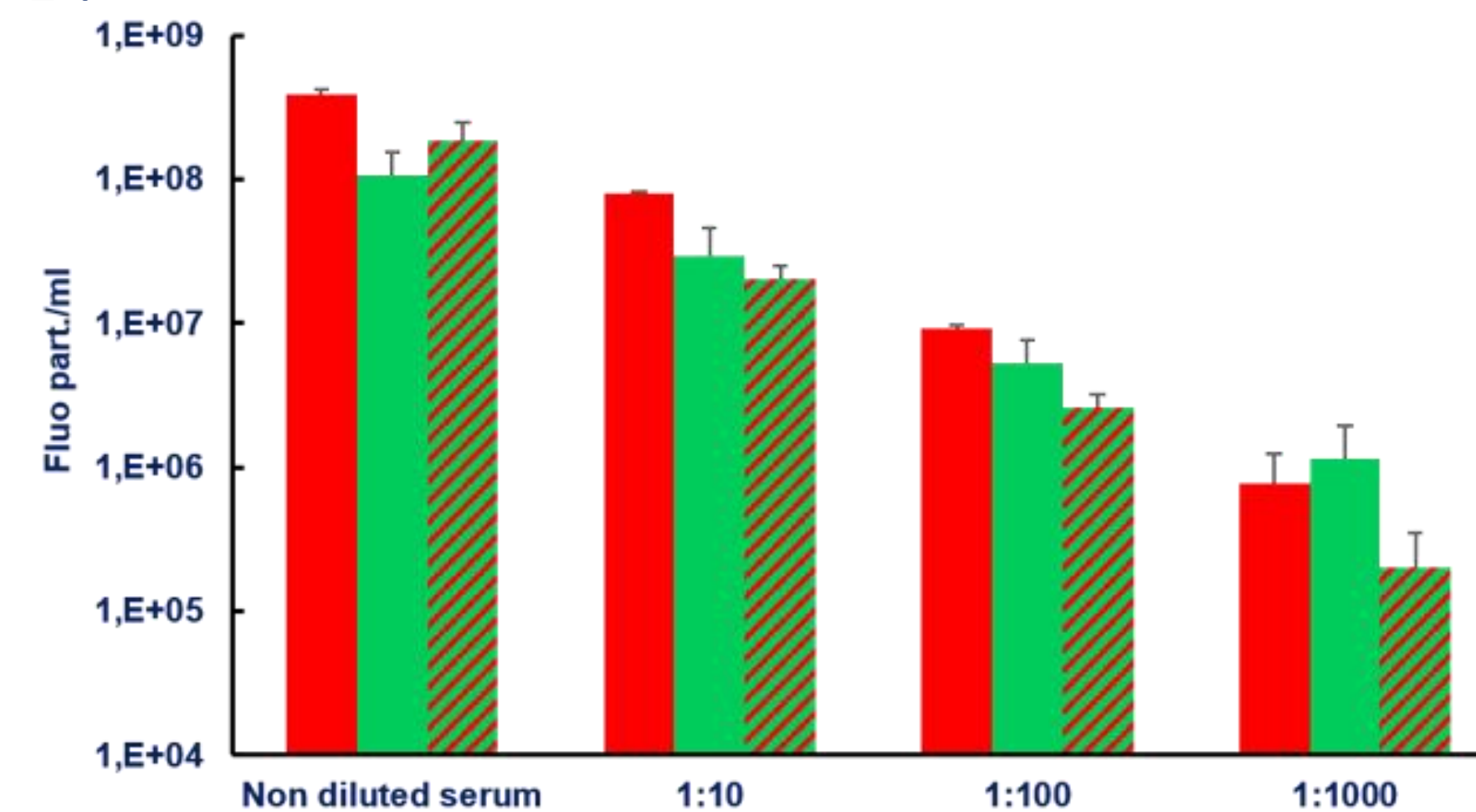


I. Analysis of blood EV populations

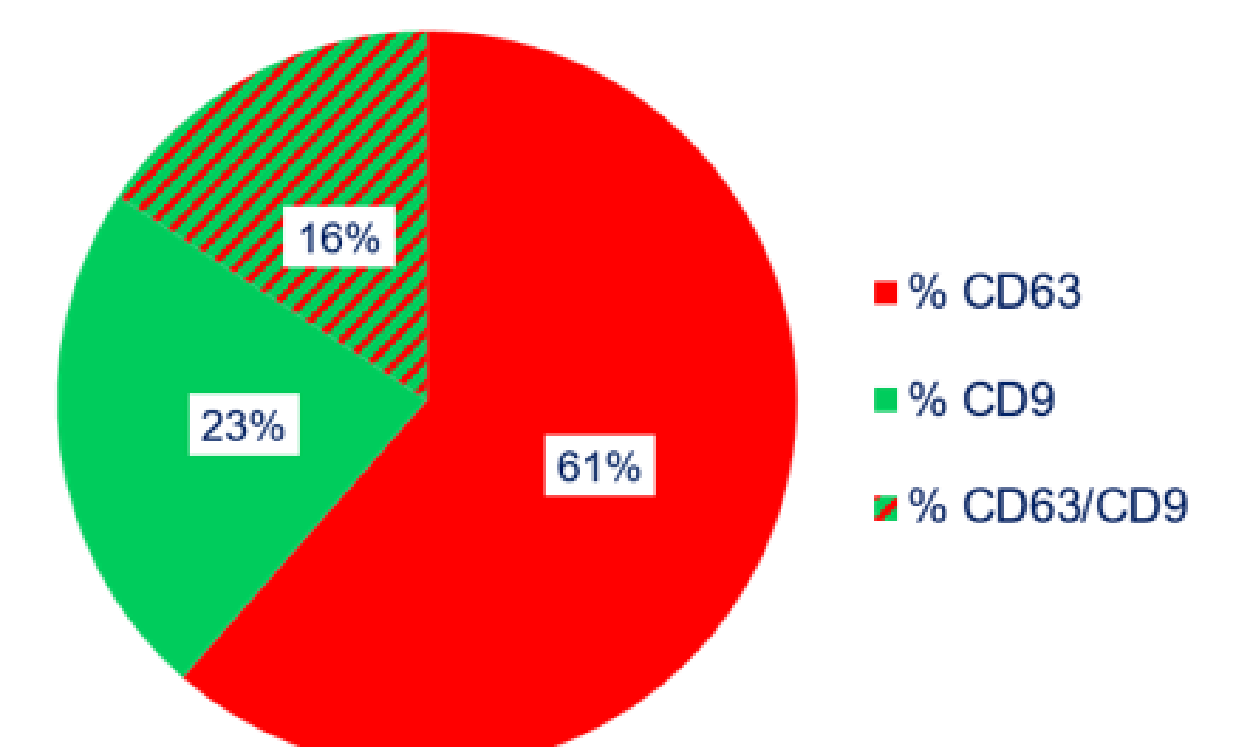
A. Healthy volunteers serum
Immune staining + SEC qEV single (F1+F2)



B. CONCENTRATION DEPENDING ON DILUTION

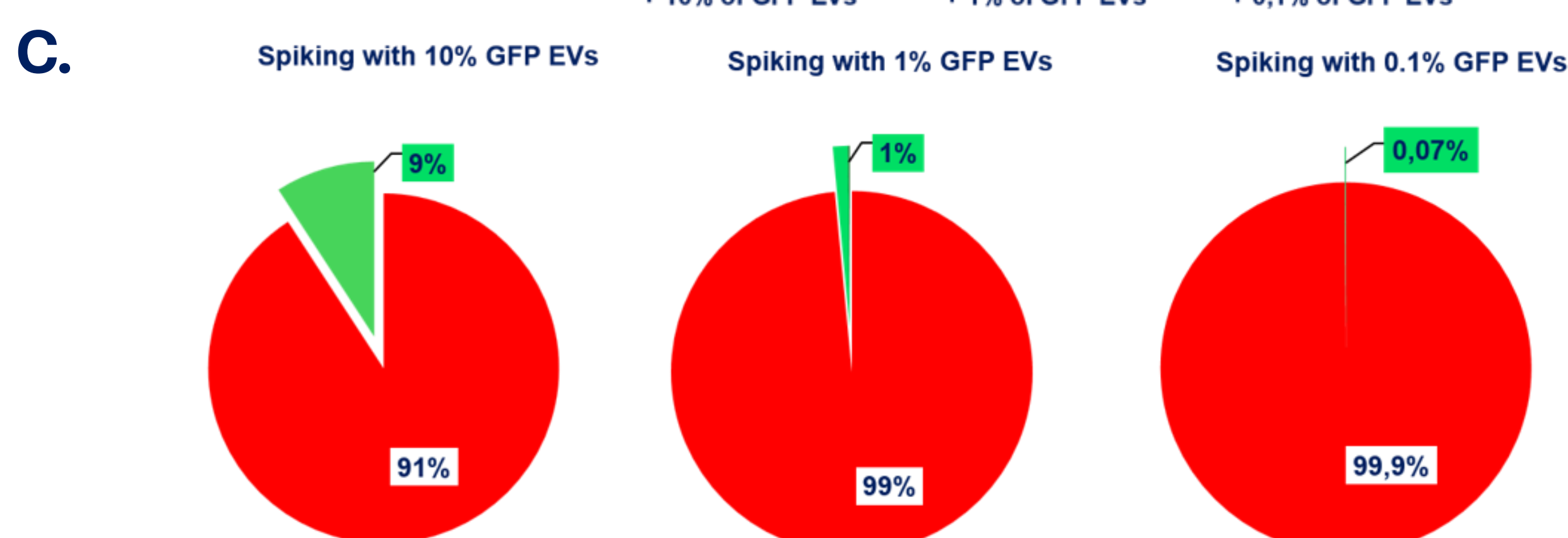
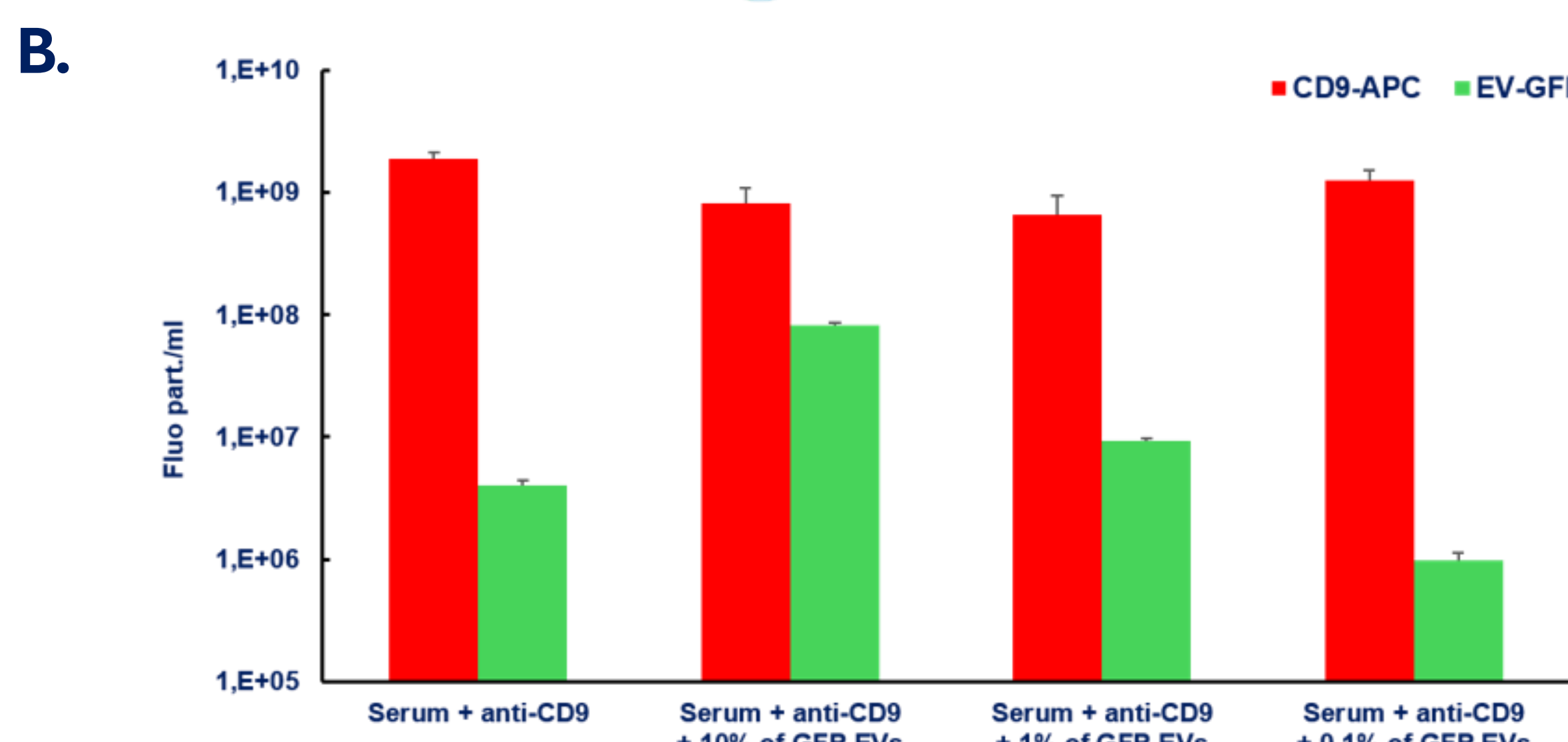
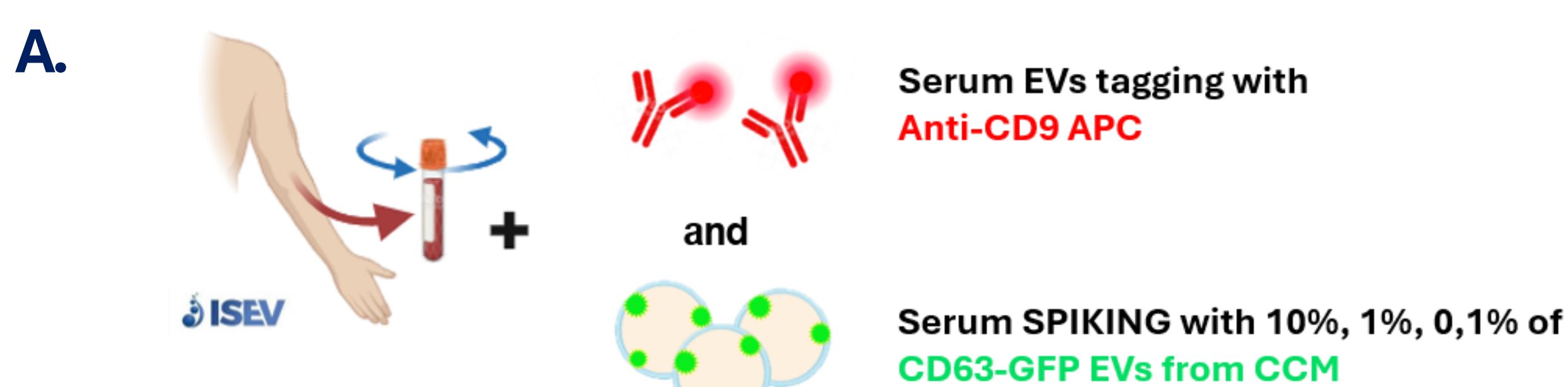


C. EV POPULATIONS DISTRIBUTION (for 1:10)



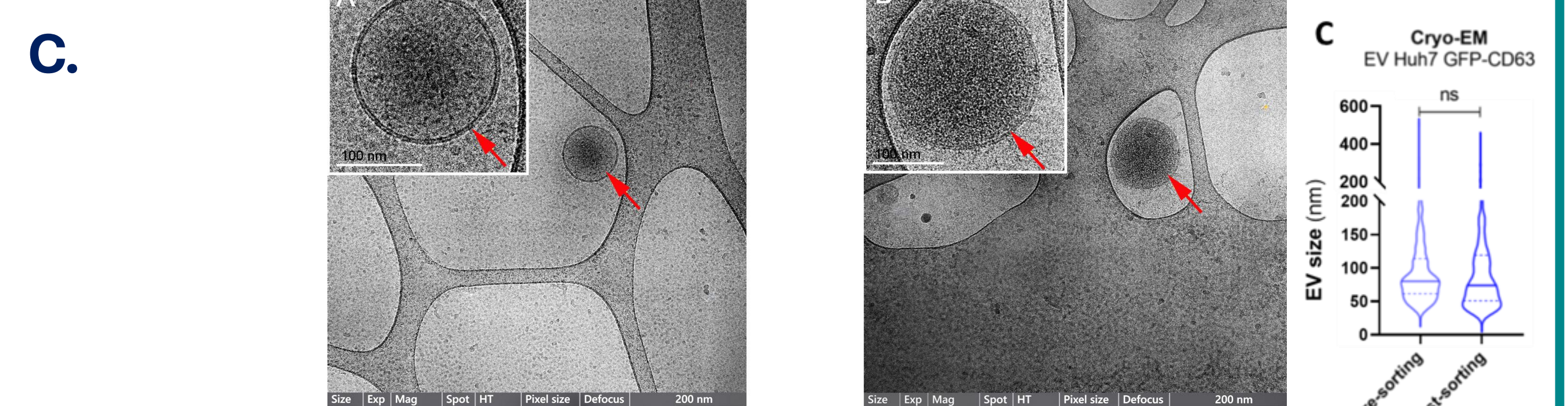
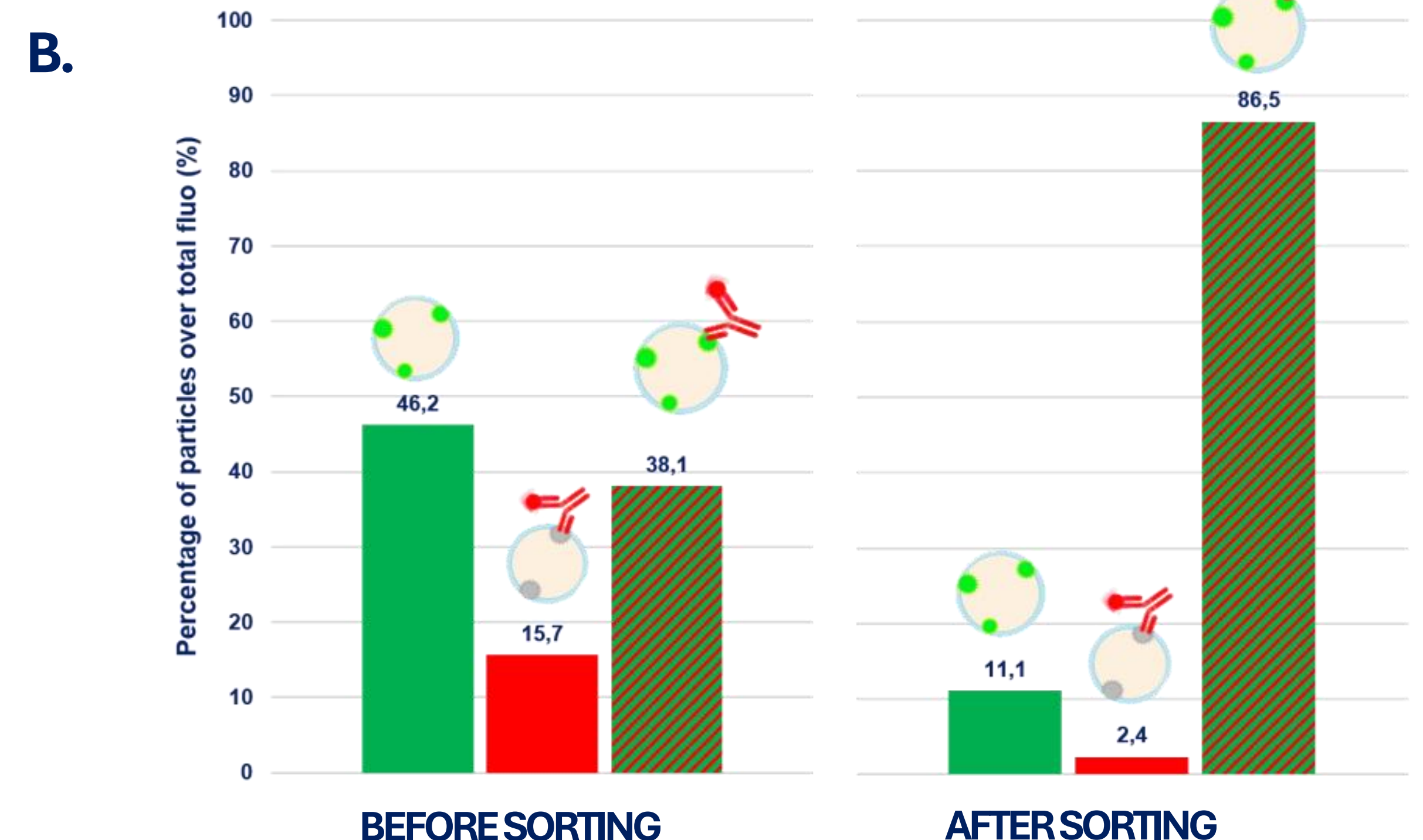
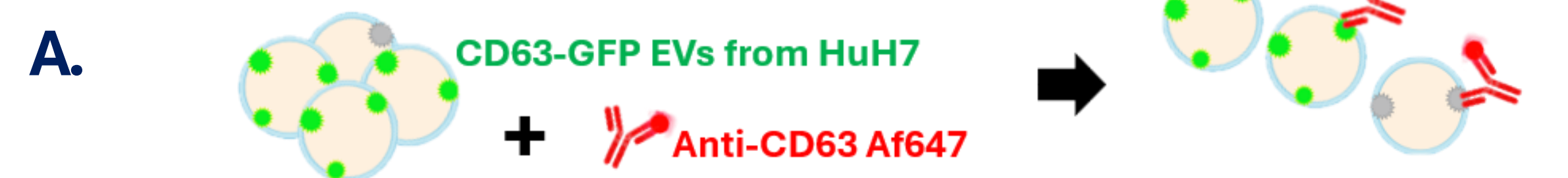
NanoSorter allows rapid quantification of serum EVs subpopulations depending on CD9 and CD63 tetraspanins. **A.** Schematic view of preanalytical procedure, **B.** Concentration of fluorescent particles (fluo part./ml) expressing CD63-Af647, CD9-FITC, or combined CD63/CD9 in serially diluted serum samples after a 2 min run. Data presented as mean $\pm$ standard deviation, **C.** Relative distribution (%) of EVs subpopulations. Percentages are calculated based on the total fluorescent events.

II. Detection of low-abundance blood EVs



Detection of exogenous GFP EVs added at stepwise decreasing concentrations to human serum. **A.** Schematic view of preanalytical procedure, **B.** Concentration of fluorescent particles (fluo part./ml) expressing CD63-GFP or CD9-APC in EV-GFP spiked serum samples. Data presented as mean $\pm$ standard deviation, **C.** Relative distribution of EVs subpopulations. Percentages are calculated based on the total fluorescent events.

III. Dual colored EVs Sorting



NanoSorter efficiently sorts selective EVs subpopulations without altering integrity.

A. Schematic view of the preanalytical procedure, **B.** Distribution of fluorescent EVs populations (CD63-GFP, CD63-Af647, or both) before and after NanoSorter sorting, **C.** Cryo-EM pictures of CD63-GFP EVs (HuH7) before (a) and after (b) sorting. (c) EVs size comparison between conditions.