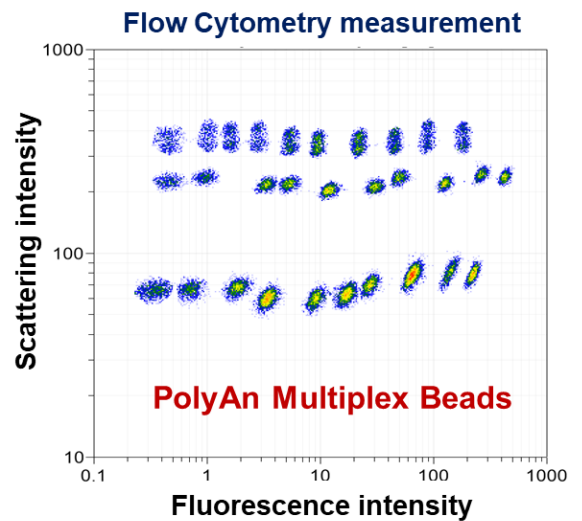


PolyAn Red4 Multiplex Beads

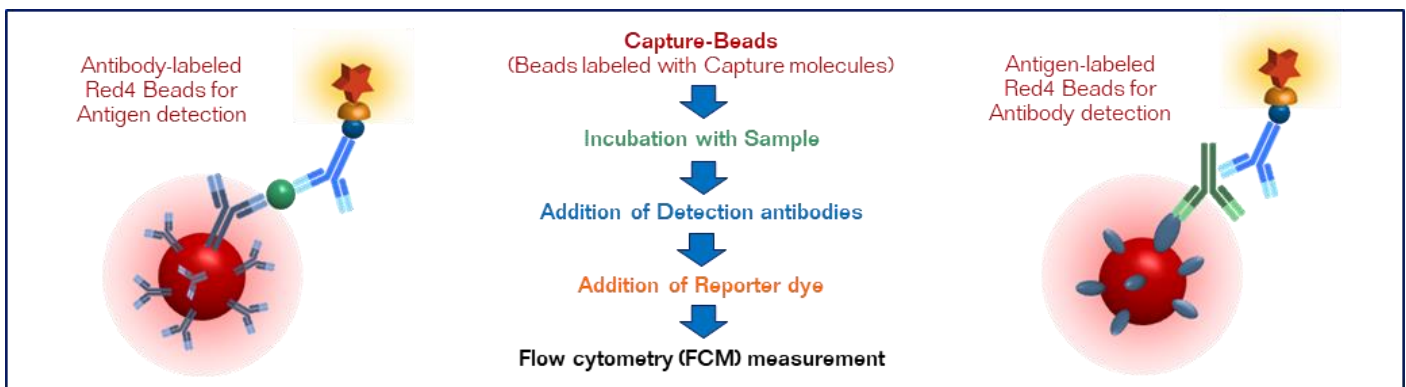
PolyAn offers a set of 30 bead populations (30-plex) that can be distinguished both by different fluorescence intensities of our PolyAn Red4 dye in the APC channel and by different scattering intensities due to three different bead sizes.

PolyAn's Red4 Multiplex Beads provide a platform for the design of multiplexed assays that can be run on a wide range of standard flow cytometers.

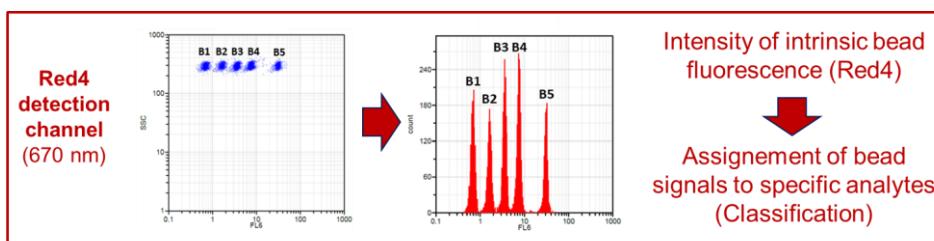


Principle of Bead-based Immunoassays

The principle of bead-based sandwich immunoassays for the detections of antigens or antibodies using PolyAn Red4 Multiplex Beads and flow cytometry is illustrated below.

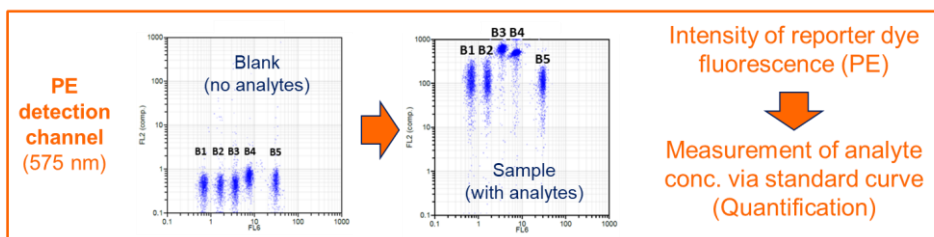


Flow cytometry-based detection



Each Red4 bead population is encoded with a distinctive fluorescence intensity:

→ Bead populations can be classified by their different emission intensities

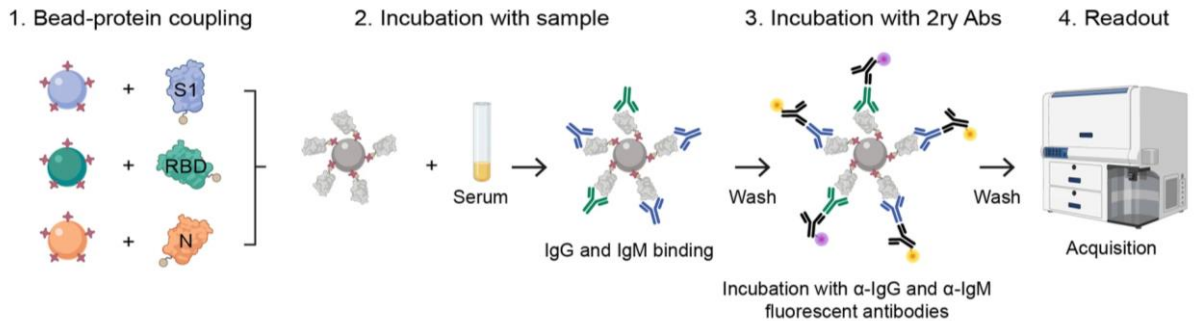


Each analyte specifically binds to its corresponding Capture-Bead:

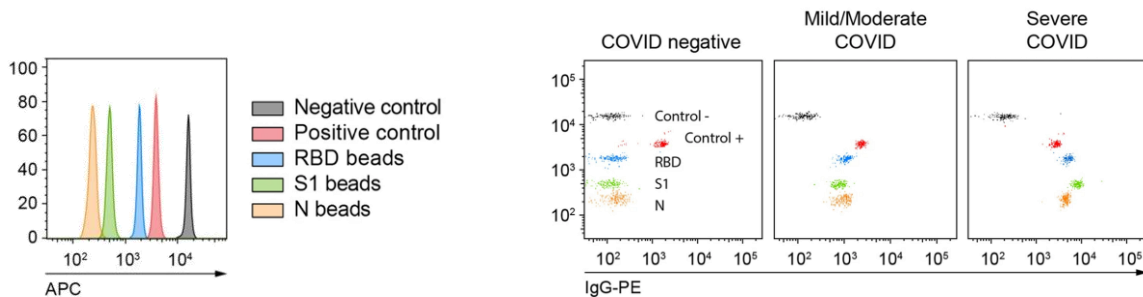
→ Analytes can be quantified via the emission intensity of the dye reporter

User-case: Detection of SARS-CoV-2 Seroconversion

Streptavidin-functionalized PolyAn Red4 Multiplex Beads were conjugated with recombinant biotinylated viral antigens (RBD, S1, and N) to detect COVID-specific IgG and IgM antibodies*:



The antigen-labeled PolyAn Red4 Multiplex Beads were then used, among others, to measure the IgG levels in serum samples from PCR-positive individuals at their hospital admission*:



*The Figures were adapted from the following article, licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0), <http://creativecommons.org/licenses/by/4.0/>: Egja-Mendikute, L. *et al.*, "Sensitive detection of SARS-CoV-2 seroconversion by flow cytometry reveals the presence of nucleoprotein-reactive antibodies in unexposed individuals." *Comm. Biol.* 4, 486 (2021). DOI: 10.1038/s42003-021-02011-6.

Products list

Surface chemistry	Product ID		
	3.5 µm (10 peaks)	5.5 µm (10 peaks)	8.5 µm (10 peaks)
3D-Carboxy	106 50 003	106 50 005	106 50 009
Streptavidin	106 52 003	106 52 005	106 52 009
Neutravidin	106 53 003	106 53 005	106 53 009
Protein A/G	106 56 003	106 56 005	106 56 009
3D-Aldehyde	106 54 003	106 54 005	106 54 009
3D-Alkyne	106 51 003	106 51 005	106 51 009
3D-Azide	106 55 003	106 55 005	106 55 009
3D-DBCO	106 57 003	106 57 005	106 57 009
3D-MTZ	106 58 003	106 58 005	106 58 009

Other multiplex sets with different spectral properties (excitation/emission wavelength) as well as custom modifications with antibodies, peptides, or oligonucleotides are available upon request.