



Drying After Freezing: Rethinking Sample Preservation for
Modern Biomedical Workflows

14th Nacionales Biobanken-Symposium 2026
15th-16th September 2026

Pablo Peñalosa
300K Solutions



About us

300K Solutions is focused on providing solutions to preserve biological samples at room temperature



INNOVATIVE SME
Valid until Feb 9th 2027



Freeze-drying

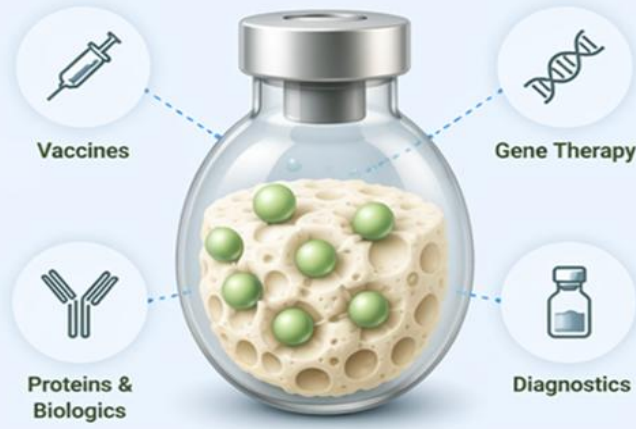
Mature Technology

Freeze-drying is well established and used across many industries.



Gold Standard in Many Industries

Trusted to protect what matters.
From vaccines to advanced therapeutics.



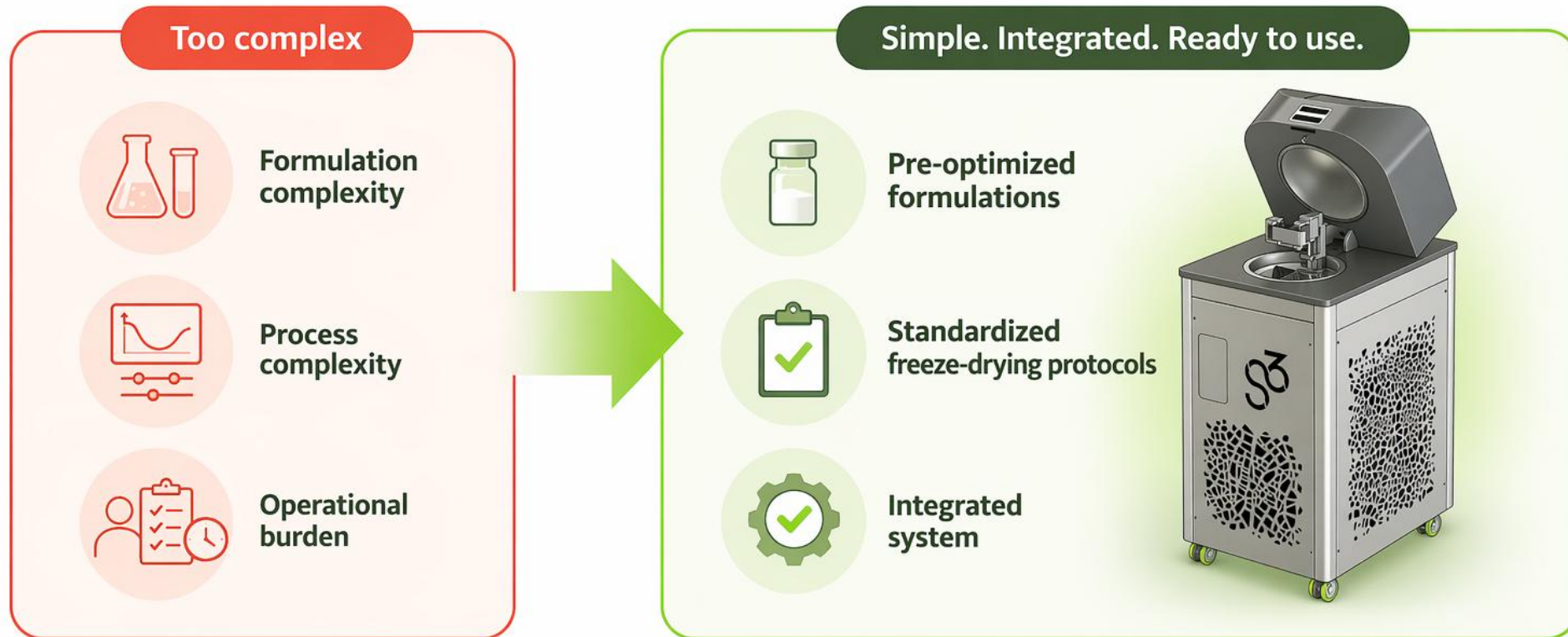
Already Tested with Biospecimen

Demonstrated successfully
in research and specialized applications.



So why isn't it routine for biological samples preservation?

Solution

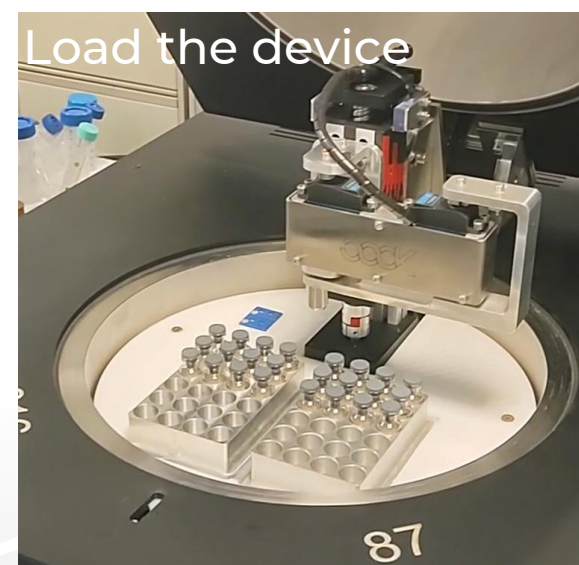
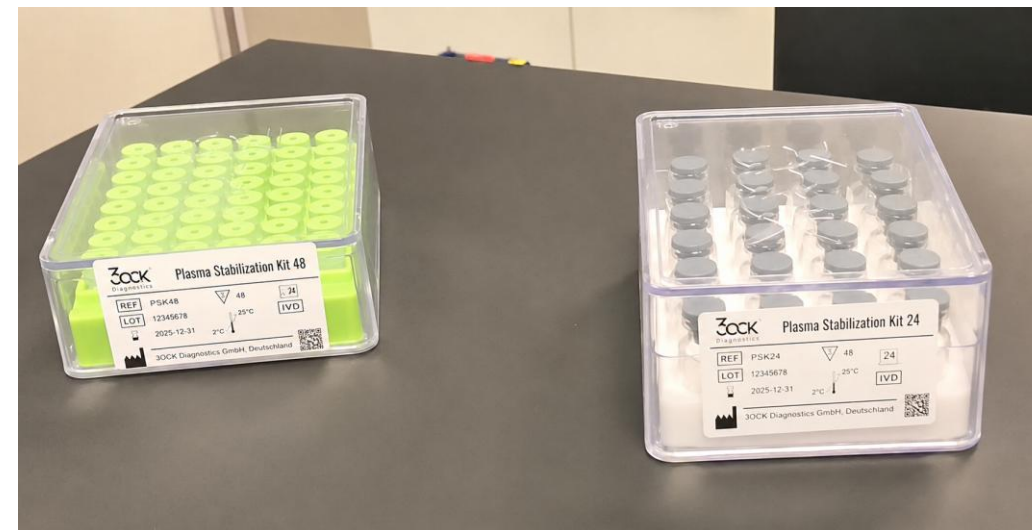


From **optimization** to **standardization**.

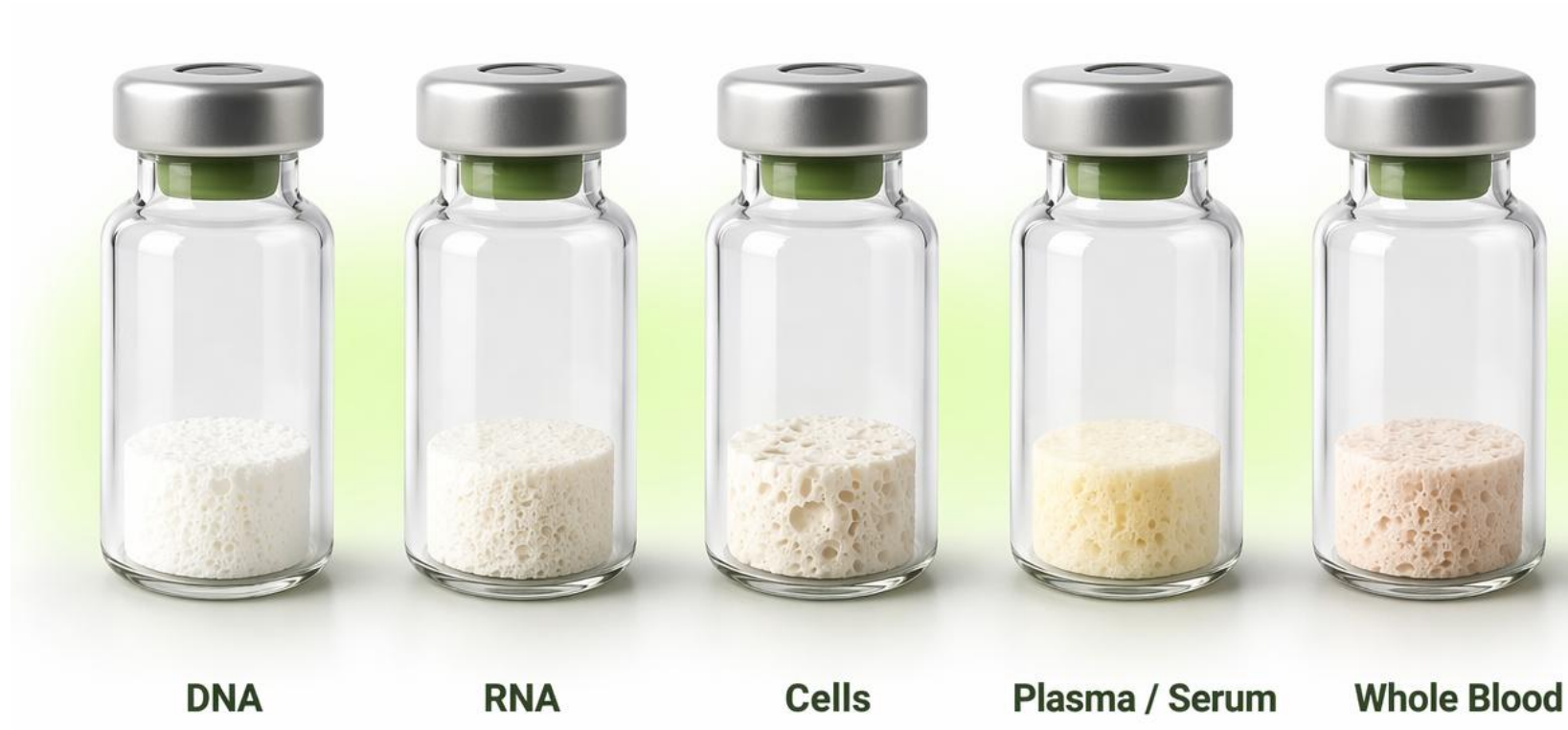
Workflow



How it works in **real world**



Validated across a range of **biological samples**



What are the advantages for your lab?

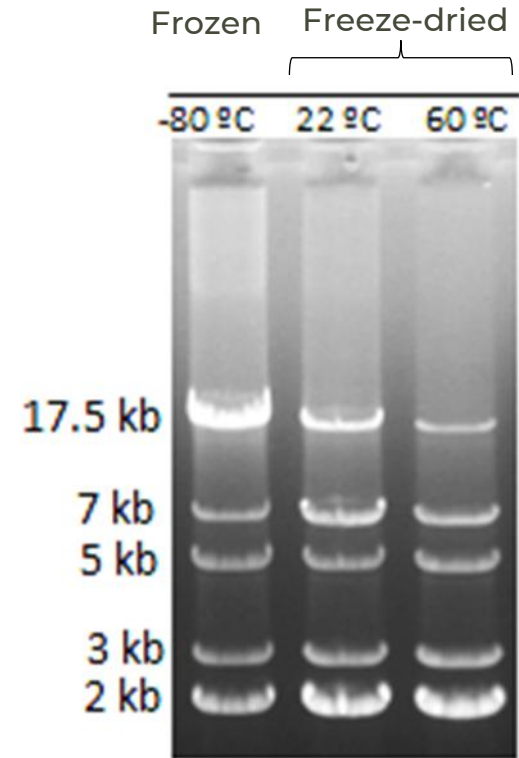


Not depending on the cold-chains:

- Store samples at **room temperatura**/eliminating the need for **ultra-low temperature** storage.
- Free up valuable **storage** space/**Increase storage** capacity by up to **240%**.
- **Lower operational cost** by up to **72%** (Shipping cost, alarm systems, etc)
- **Ensure 100% secure** sample storage.
- **New users for biobanks are open** (cover unmet needs on cellular studies with *Cell Suspension Solution*)

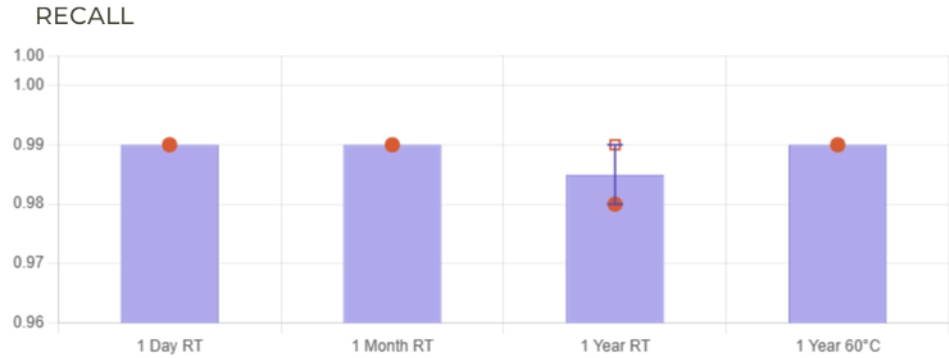
Purified DNA

Functionality & Integrity

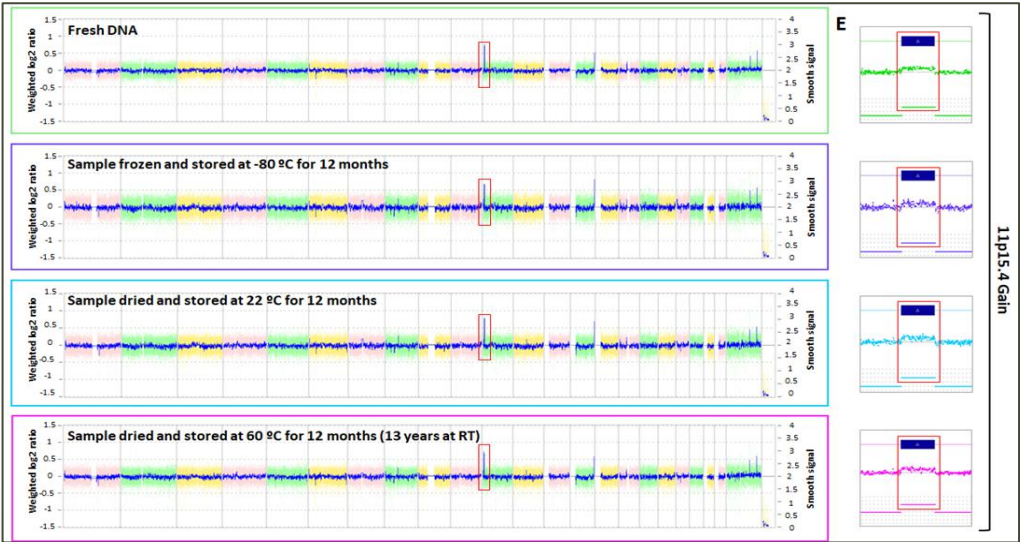


Multiplex Long PCR

Whole exome sequencing



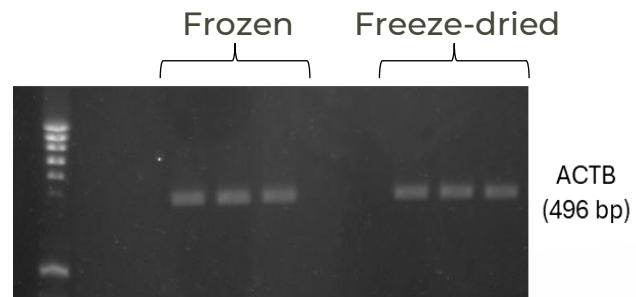
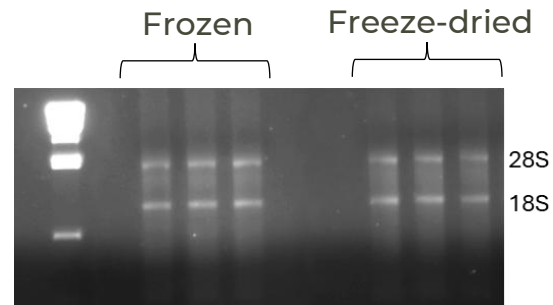
SNPs array (CytoScan® 750K)



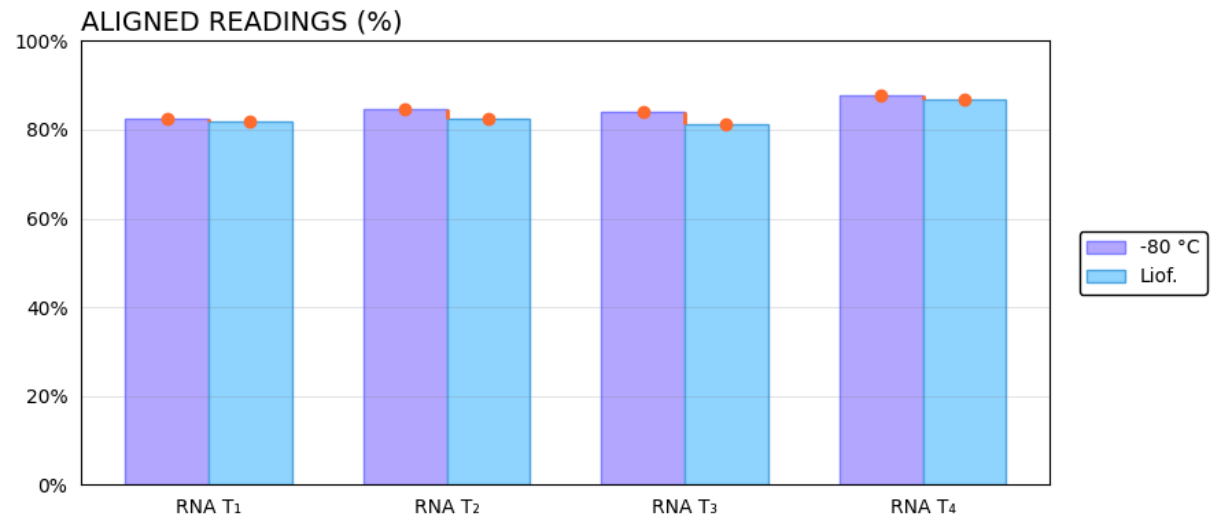
Purified RNA

Functionality & Integrity

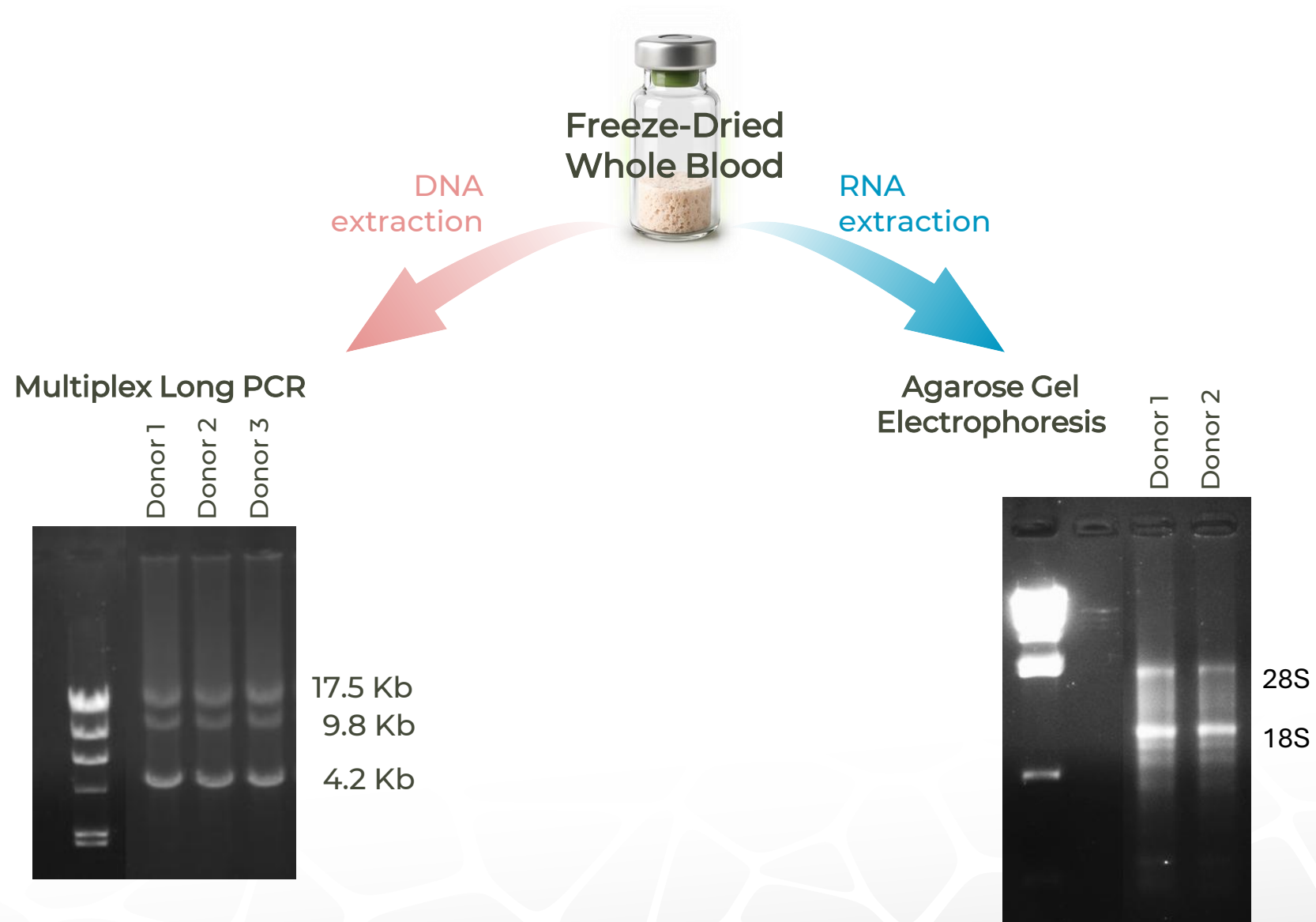
Freeze-Dried
RNA



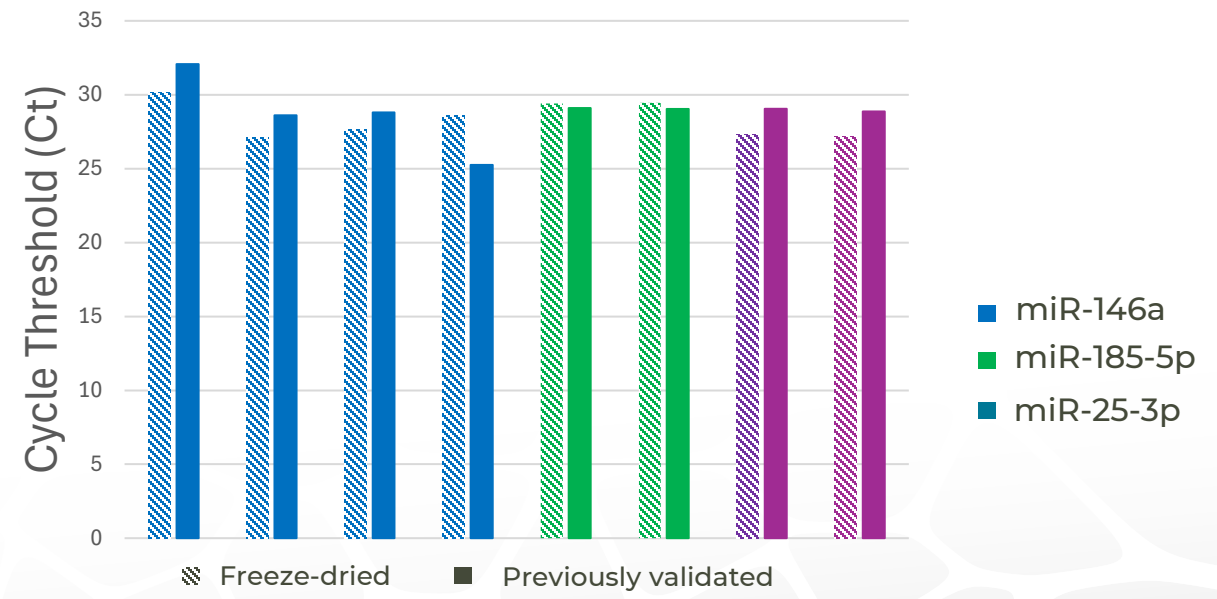
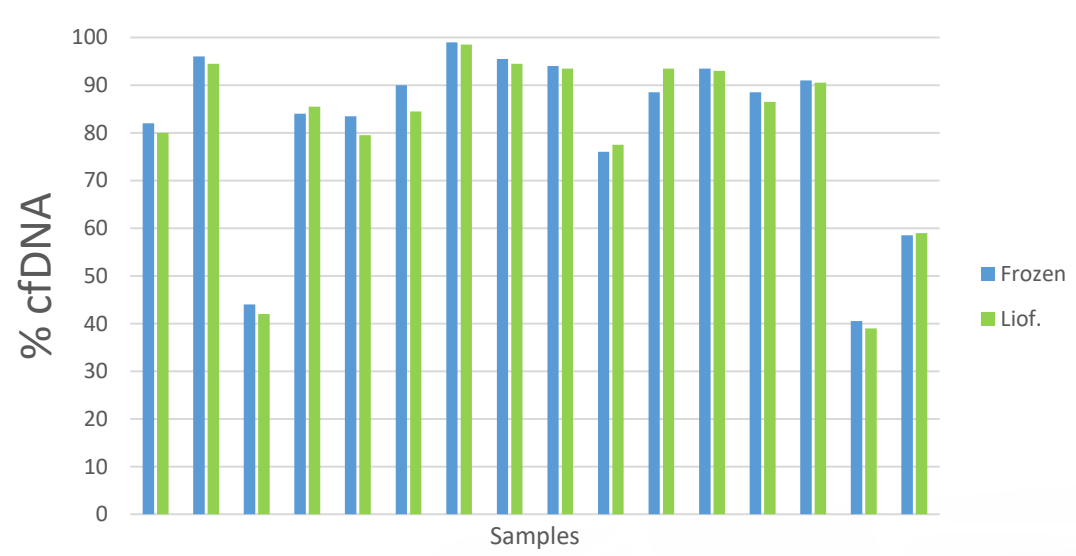
3'Tag RNA-Seq



Whole Blood



Blood Plasma & Serum

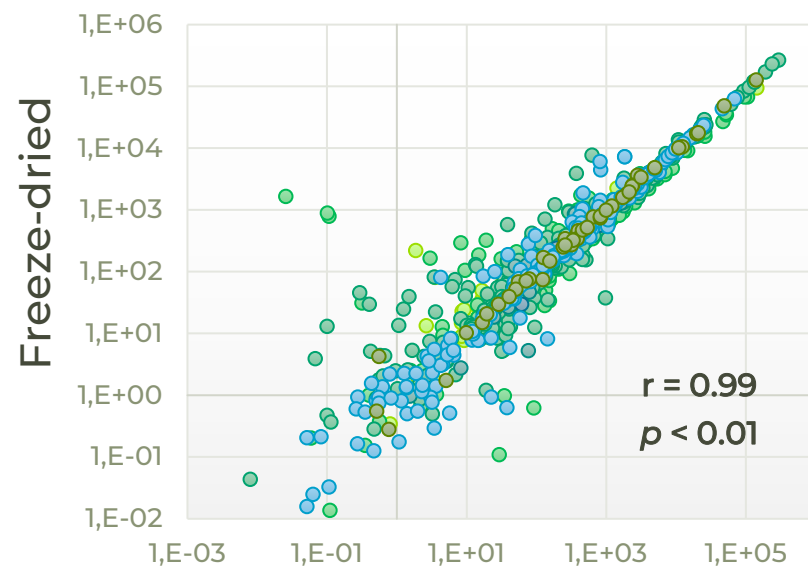


Blood Plasma & Serum

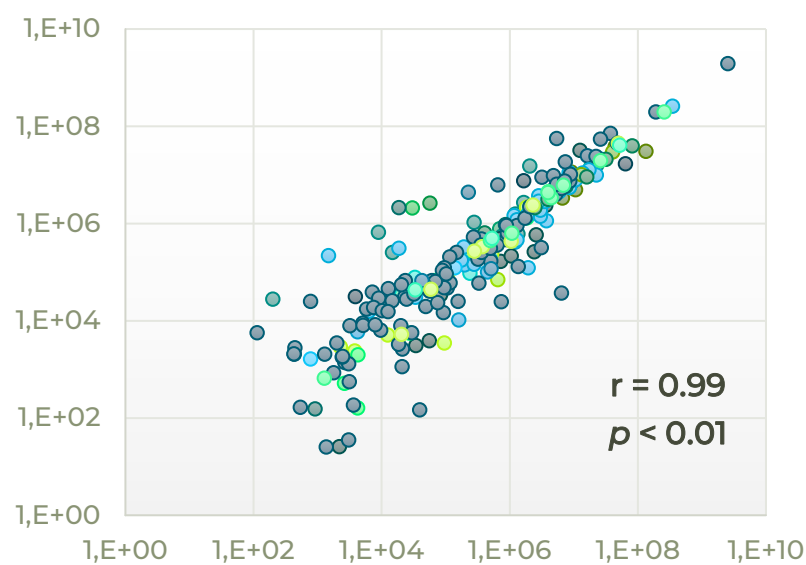


Liquid Chromatography coupled to Mass Spectrometry

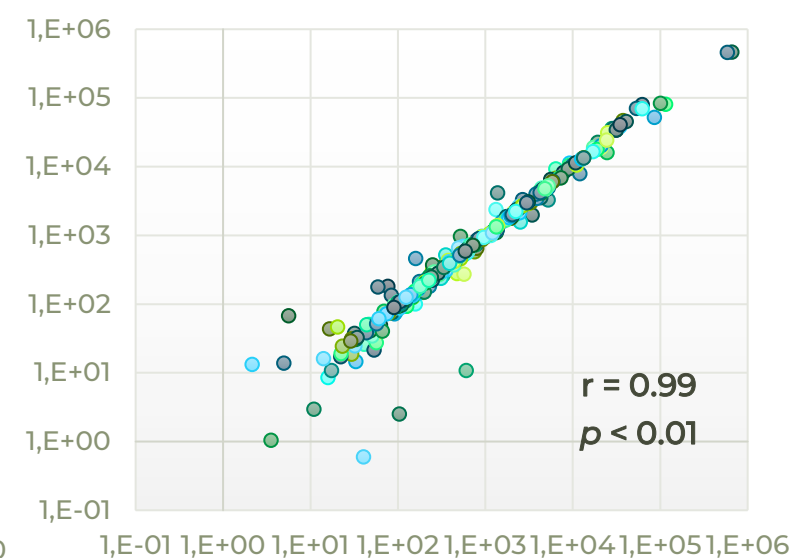
938 lipids



254 metabolites

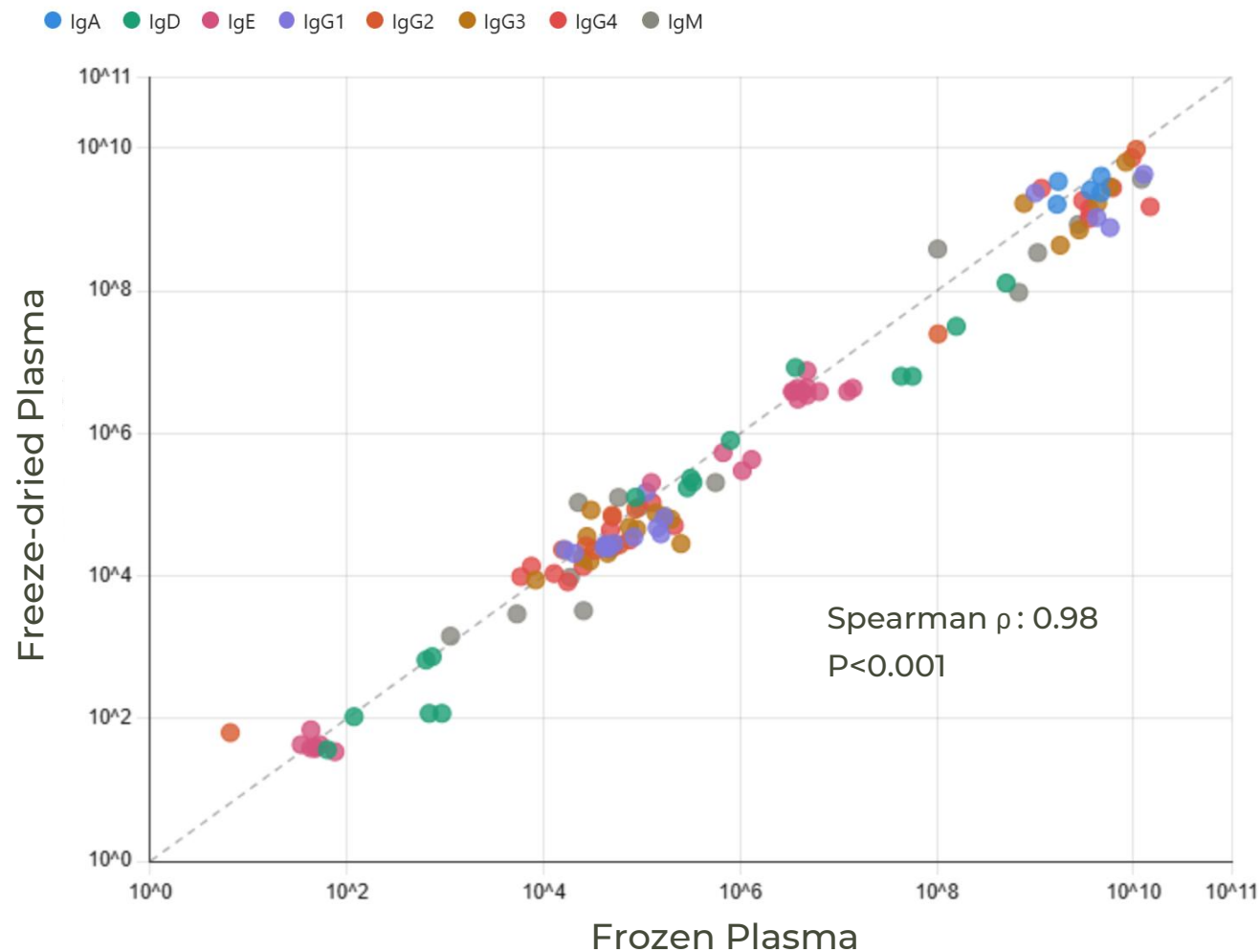


258 proteins



Frozen

Blood Plasma & Serum



Freeze-Dried
Blood Plasma
& Serum

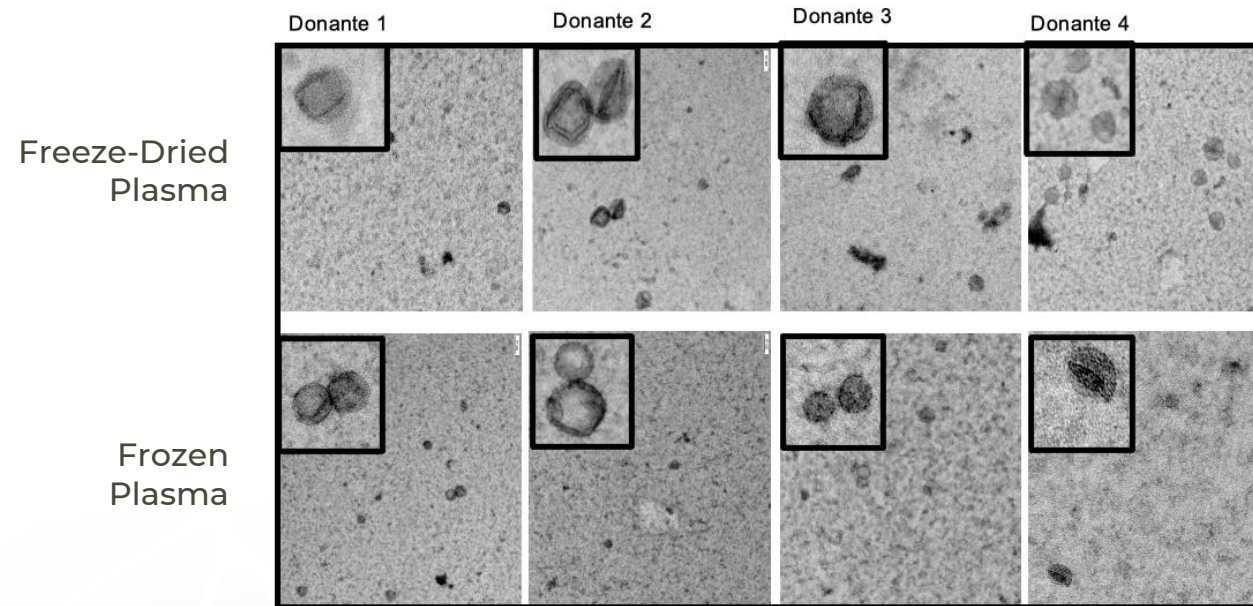


CBA multiplex assay

Blood Plasma & Serum

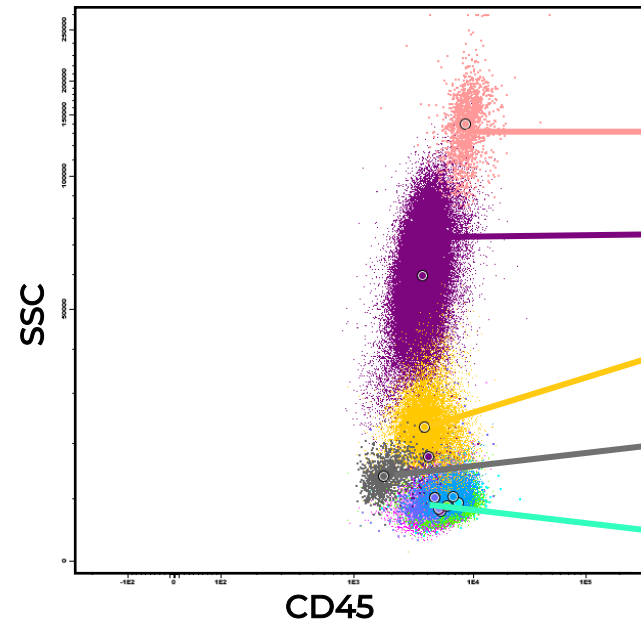
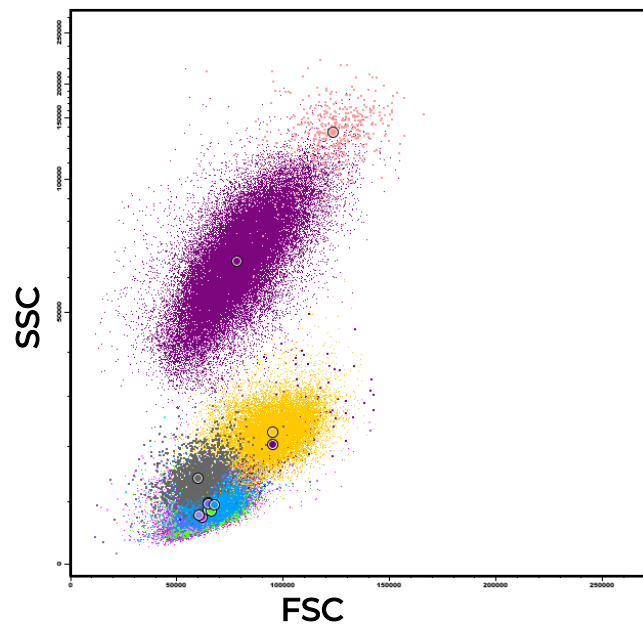


Exosome
Purification



Blood cell immunophenotyping studies

Freeze-Dried
Whole Blood cells



Eosinophils: 1.0 ± 0.2 %

Neutrophils: 55.4 ± 6.0 %

Monocytes: 9.4 ± 1.7 %

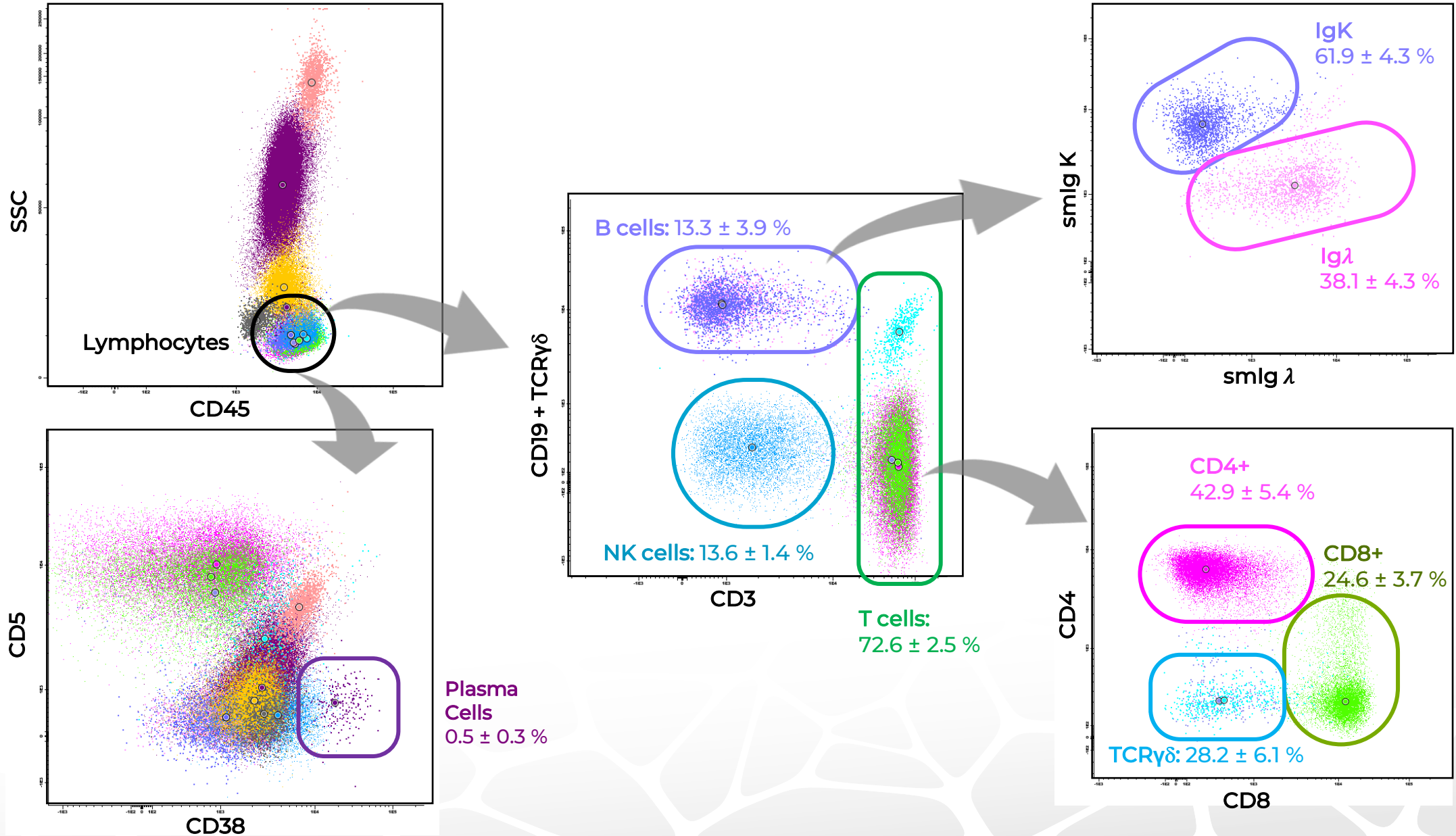
Basophils: 1.5 ± 0.6 %

Lymphocytes: 32.7 ± 5.2 %

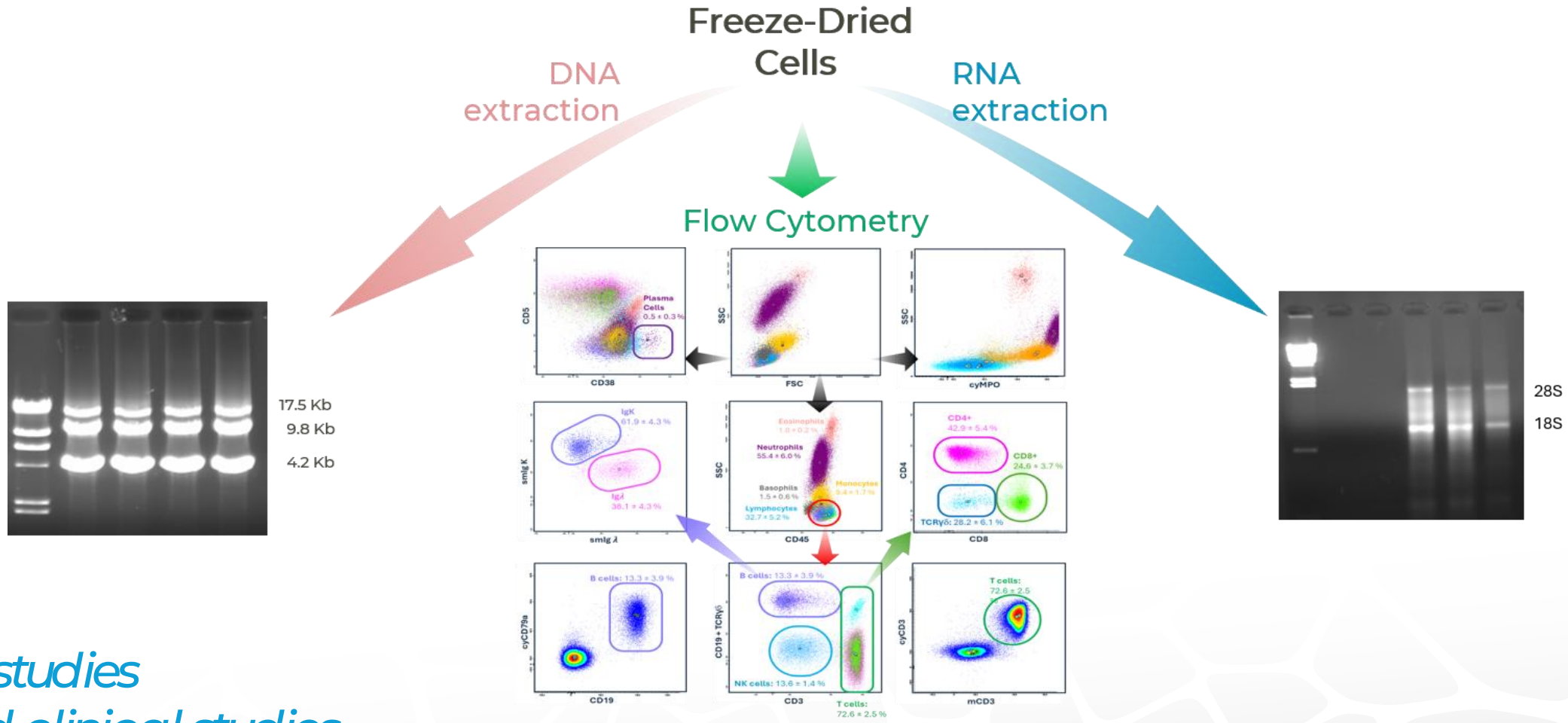
Main cell populations keep their relative proportions.
No selective cell population loss.
No cell fixation=no epitope loss.



Blood cell immunophenotyping studies



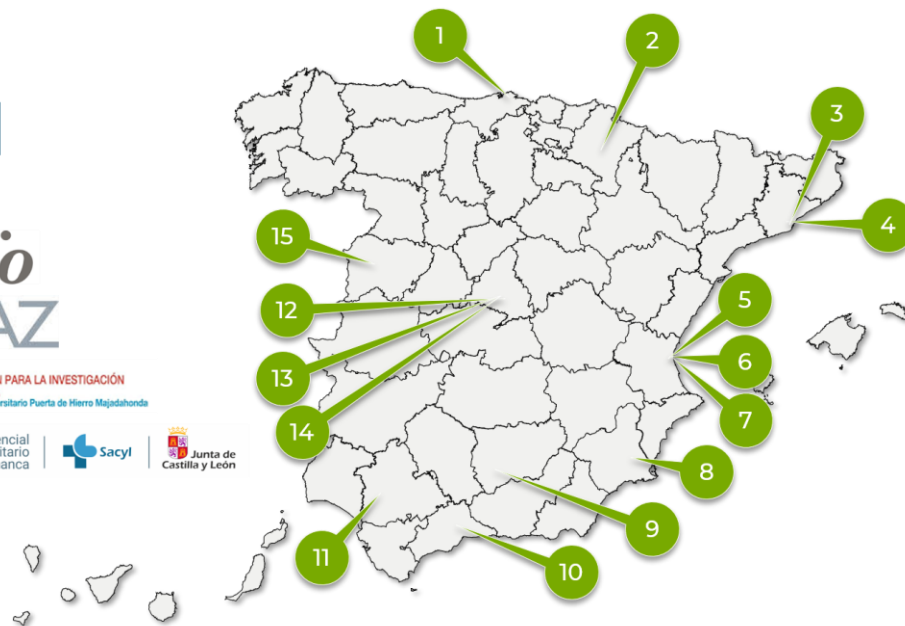
One sample.... multiple possibilities!



Longitudinal studies
Decentralized clinical studies
QC assessment programs

- 1 Valdecilla
Instituto de Investigación Biomédica de Valencia IDIVAL
- 2 Universidad de Navarra
- 3 IDIBAPS
- 4 IDIBELL
Institut d'Investigacions Biomèdiques de Bellvitge
- 5 IVO
FUNDACIÓN INSTITUTO VALLADOLID DE ONCOLOGÍA
- 6 Fundació Fisabio
- 7 Biobanco La Fe

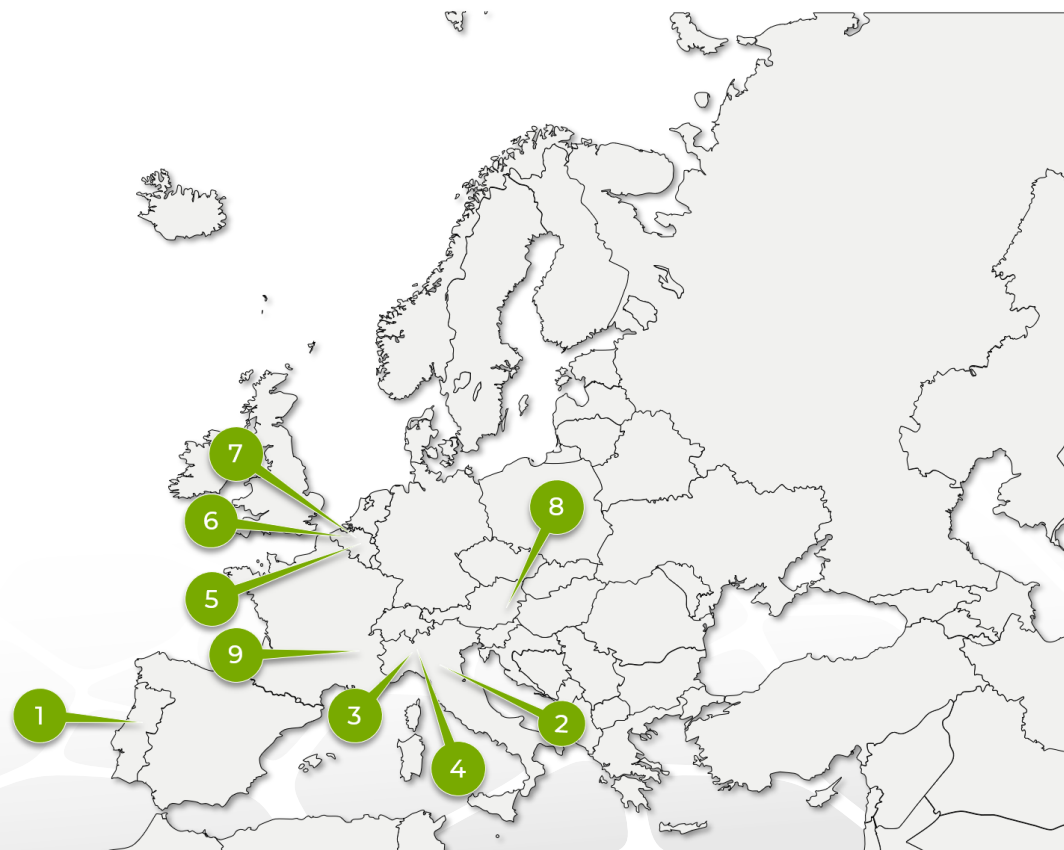
- 9 Hospital Universitario de Jaén
- 10 ibima
Biblioteca BIONANO
- 11 Virgen del Rocío
- 12 cnio
- 13 IdiPAZ
- 14 FUNDACIÓN PARA LA INVESTIGACIÓN BIOMÉDICA
Hospital Universitario Puerta de Hierro Majadahonda
- 15 Complejo Asistencial Universitario de Salamanca | Sacyl | Junta de Castilla y León



Who is using it?

Validations and co-developments

- 1 BIOBANCO
do Centro Académico Clínico de Coimbra
- 2 ALMA MATER STUDIO
UNIVERSITÀ DI BOLOGNA
- 3 I.R.C.C.S. Policlinico San Donato
Gruppo San Donato
- 4 FONDAZIONE IRCCS
ISTITUTO NAZIONALE DEI TUMORI
- 5 sciensano
Belgian institute for health
- 6 UZA
- 7 Biobank
universitair ziekenhuis Antwerpen
- 8 CBmed
BIOMARKER RESEARCH
ENABLING APPLIED PRECISION MEDICINE
- 9 International Agency for Research on Cancer
World Health Organization



How can you get started?

1

Ask us for data

We will keep you updated with the most recent results we have at any moment

2

Ask us for a test sample

We will send you a sample of freeze-dried sample for you to test with your own reagents

3

Ask us for a test drive

We will offer you several options for you to run a pilot on your samples, at your lab.

We are ready to implement the technology, are you ready too?



Contact us:

Pablo.penalosa@300k.bio

Thank you

Partners



«Proyecto BIORT - Solución para la estabilización y almacenamiento de bioespecímenes a temperatura ambiente (SoE-20251003) - Subvencionado por el CDTI»
«Este proyecto ha recibido financiación de CDTI con Fondos FEDER 2021-2027 a través del programa de ayudas Sello de Excelencia»

