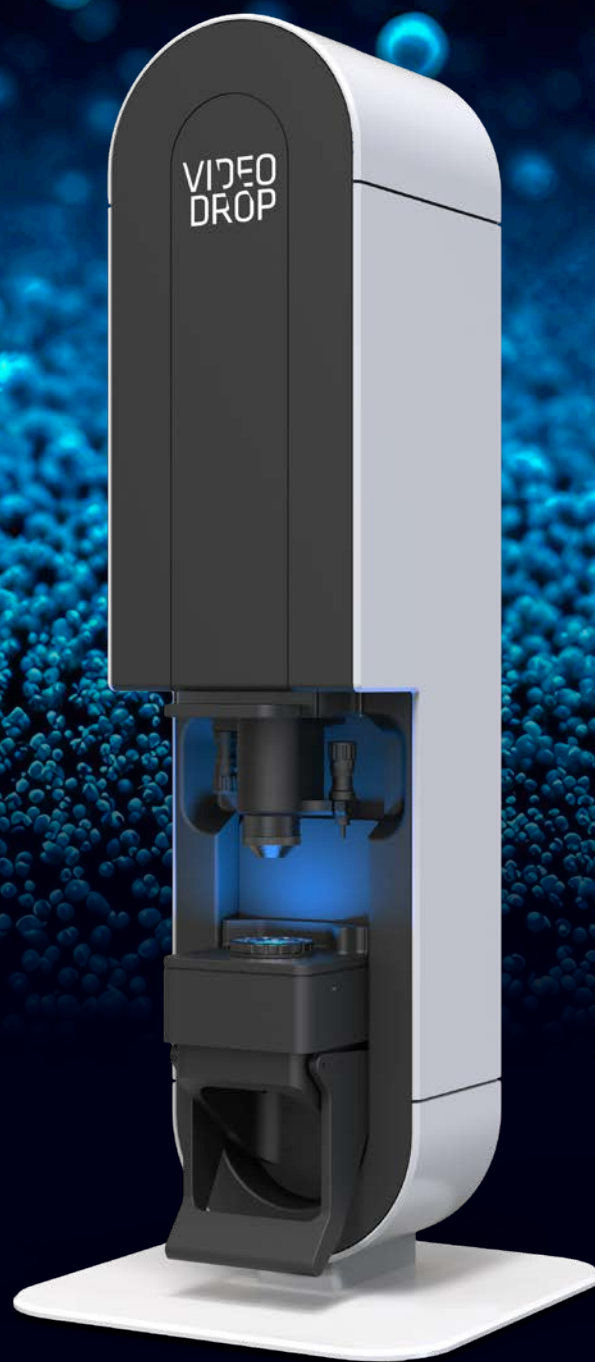


# VIDEO DROP sc



Measuring  
**Size & Concentration**  
of Nanoparticles



myriade

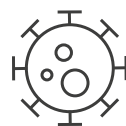
# VIDEO DROP



Designed by physicists,  
for biologists

**Videodrop is an advanced combination of optical innovation from the Langevin Institute and high-performance software algorithms.** It provides the easiest and fastest way to measure nanoparticle size and concentration. Based on Interferometric Light Microscopy (ILM), Videodrop is the ideal tool for scientists working on lentiviral vector (LV) development, extracellular vesicle (EVs) research and production, and lipid nanoparticle (LNP) formulation.

## APPLICATIONS



LV



EVs



LNP

## SPECIFICITIES

5-10 $\mu$ L

In a single drop

80-500nm

Size range

10<sup>8</sup>-10<sup>10</sup> part/  
mL

Concentration range

UP  
TO 10 $\mu$ m

Visualization



21CFR part 11 compliant

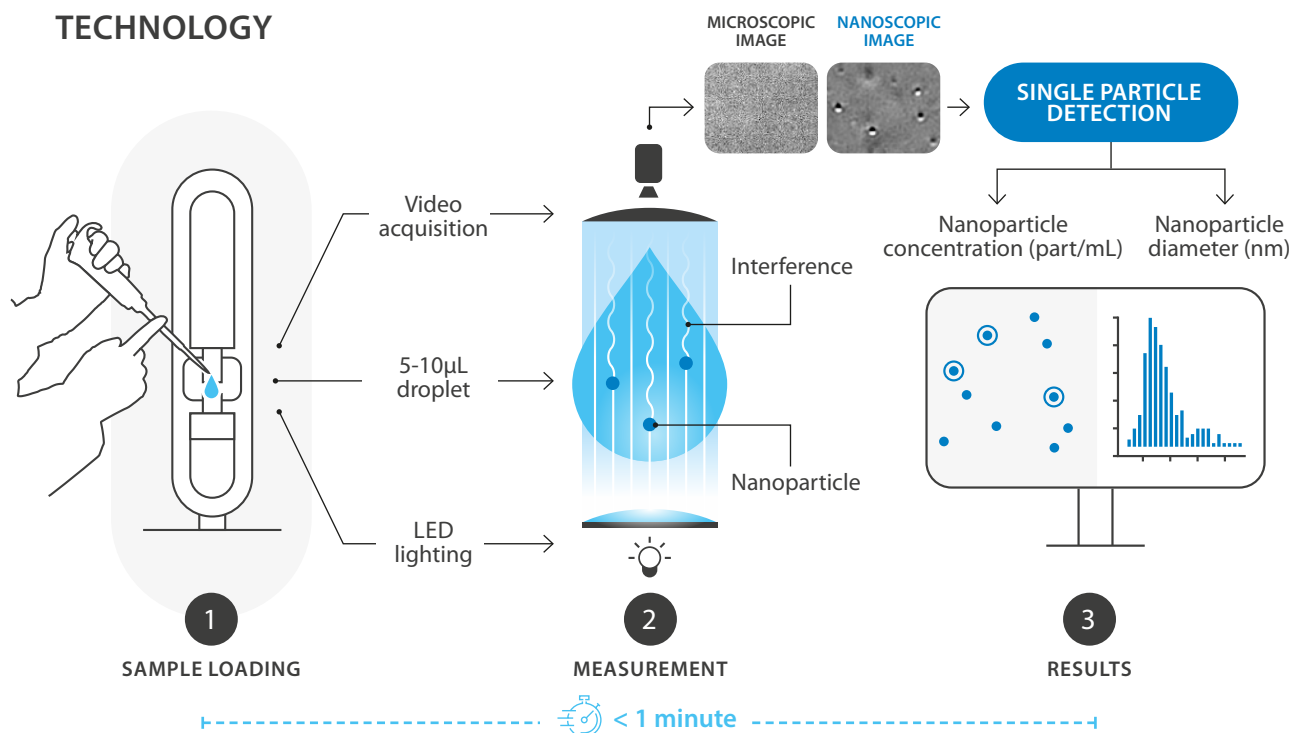


No labelling & non denaturant



Complex & viscous sample

## TECHNOLOGY



## Interferometric Light Microscopy (ILM) in 3 steps

The innovative idea of the scientific team is to have **transformed a standard microscope into an interferometer**. The nanoparticle solution is illuminated by a simple LED. A high dynamic range camera & images processing algorithms make it possible **to detect and track the interferences patterns** between the light scattered by the nanoparticles and the incident light signal. **The single particle detection** allows for accurate measurement of heterogeneous samples.

# Advantages



## Fast

- <1 minute (loading + processing + cleaning)
- No calibration
- Very low analysis volume



## Repeatable & reproducible

- No parameter to adjust
- No inter-operator bias
- Non denaturant



## Easy to use

- No fluidic: simple cleaning & no clogging
- Focus on data analysis
- Minimal training + fast learning curve
- Ideal for multiple users



# Purposes

## REAL-TIME MONITORING

Bioproduction follow-up, in-process controls, yield analysis, purification optimization

## STANDARDIZATION

Normalization by particle concentration for in vitro/in vivo tests

## STABILITY STUDY

Effect of storage conditions on nanoparticle integrity (buffer, temperature)

## TRANSLATIONAL RESEARCH

Longitudinal monitoring (cohorts of patients), long-term studies spanning several years of follow-up

## OPTIMIZED OUTPUT

Pre-measurement for time intensive tests and high-end instruments

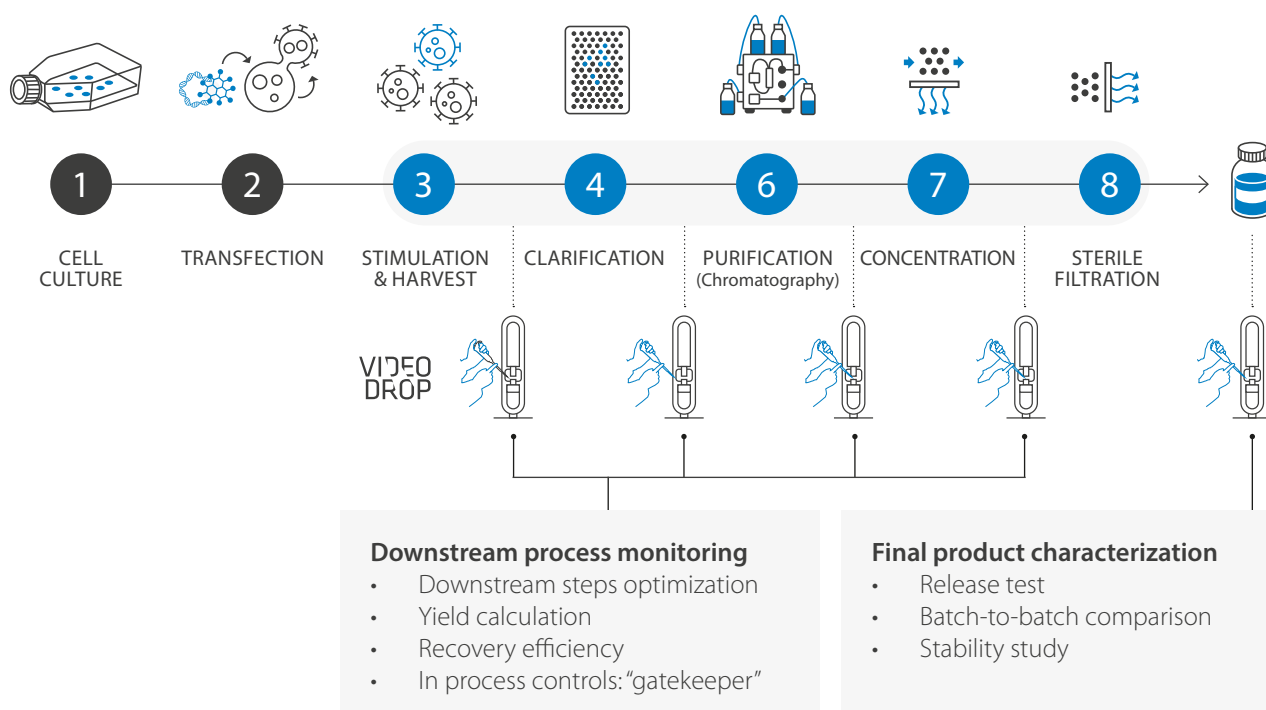


# LV bioproduction

## Context

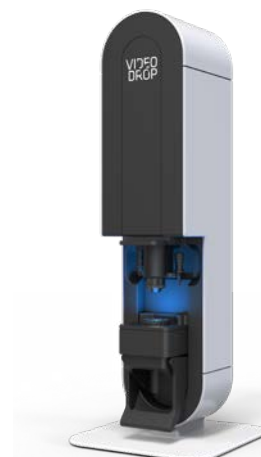
**Lentiviruses (LV), key vectors in cell & gene therapy, are essential for the production of CAR-T cells, revolutionizing oncology with precise cancer treatments.** Videodrop is suitable for lentiviral vector quantification and characterization. It is an ideal companion for bioproduction process optimization and quality controls.

## Workflow



## ADVANTAGES

- Videodrop is the ultimate tool to **optimize downstream processes** for lentiviral vector bioproduction. Videodrop is a quick and easy system used for **in-process control, at line** from lentivirus harvest sample to the highly purified final product.
- Videodrop is known to be linear with other LV physical titer methods (p24 ELISA, RTqPCR...). Therefore, it can be used as a predictive physical titer value throughout the process, **reducing the time and cost** associated with traditional methods.
- The quick measure of concentration is very valuable for **analytical development** as a **normalization value for in-vitro assays**.
- Videodrop is also well-suited for **adenovirus, HSV, MVA and rabies virus analysis**.



# LNP formulation

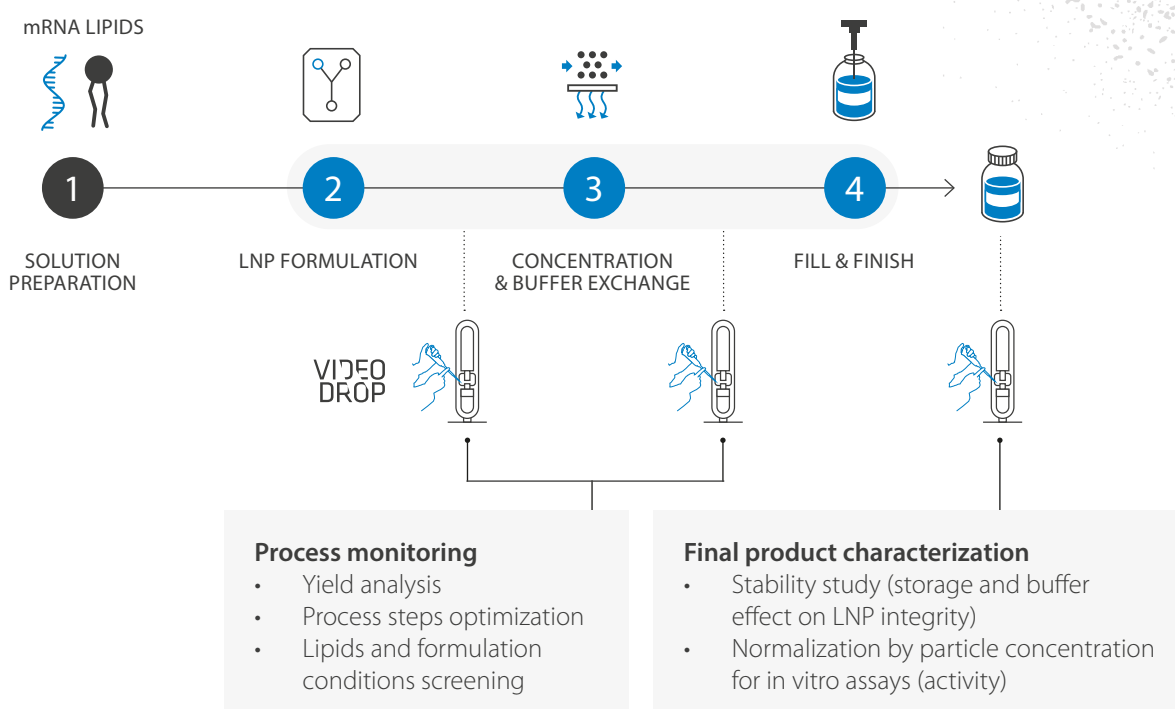


## Context

**Lipid nanoparticles (LNP), advanced delivery systems, are pivotal in mRNA vaccines & therapies, enabling accurate and efficient delivery of genetic material to cells.** Videodrop is an ideal tool to be incorporated into an analytical strategy to assess LNP quality.

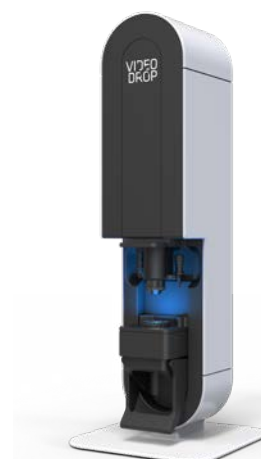


## Workflow



## ADVANTAGES

- Thanks to the single particle detection technique, Videodrop enables to assess the **particle concentration** for a better understanding of the LNP formulation process.
- Videodrop allows to **better control** of the production process by quickly and easily measuring the concentration.
- In addition, in comparative studies, **standardizing** cell-based assays (transfection activity) **using the number of nanoparticles** improves the **evaluation of LNP produced under different conditions**.





# EVs as a biomarker

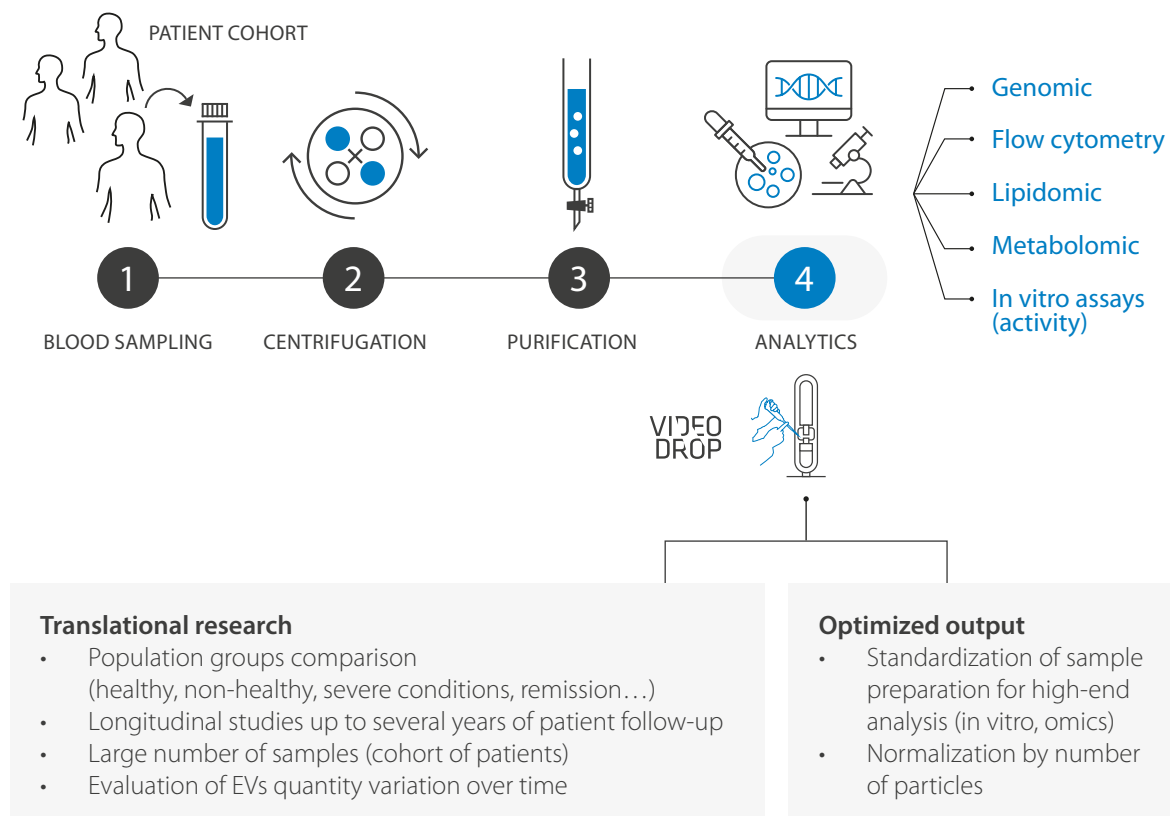


## Context

**Extracellular vesicles (EVs) are emerging as novel biomarkers for various diseases, including cancer and inflammation.** In both fundamental and translational research, but also clinical trials, the development and implementation of standardized methodologies for EVs quantification are essential for reliable results.



## Workflow



## ADVANTAGES

- Thanks to its **high repeatability and reproducibility**, Videodrop is particularly adapted for longitudinal studies in translational research and clinical studies. Cohorts, including a **high number of patients, can be easily analyzed** using Videodrop after a short EVs isolation protocol.
- Videodrop concentrations can be used as a standard concentration **to normalize high-end analysis and multi-omics approach.**

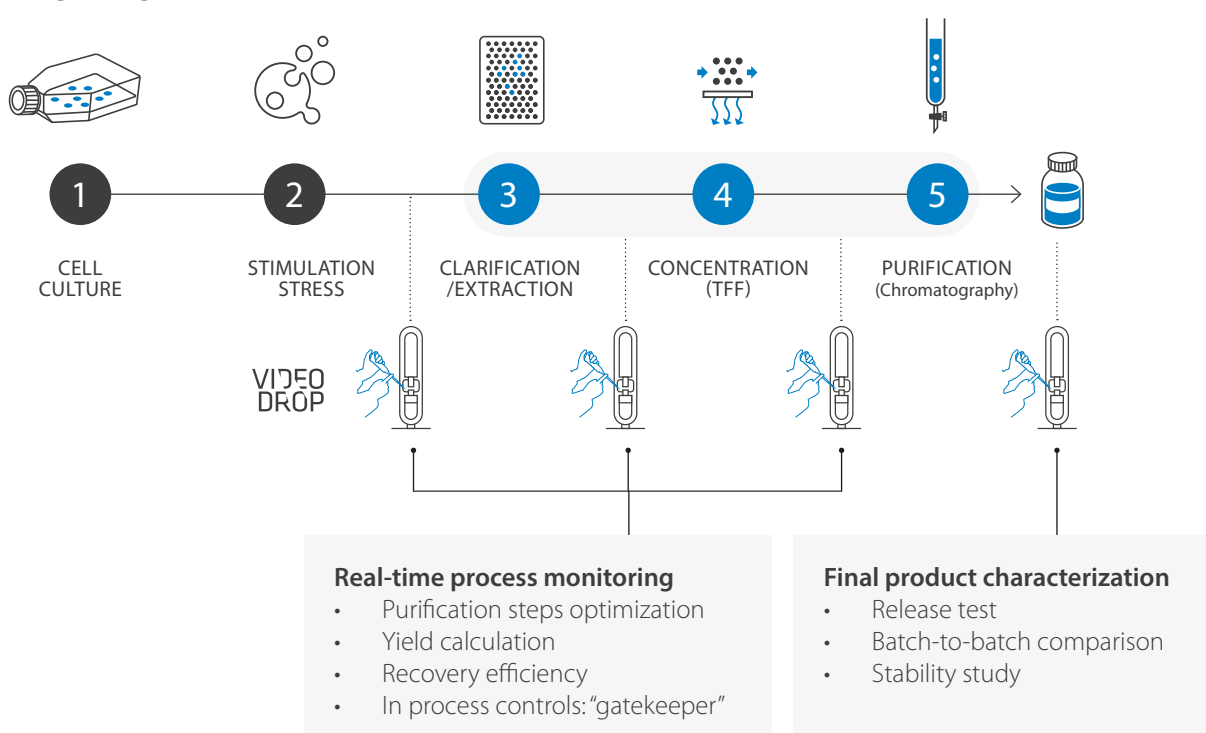


# EVs as a therapeutic

## Context

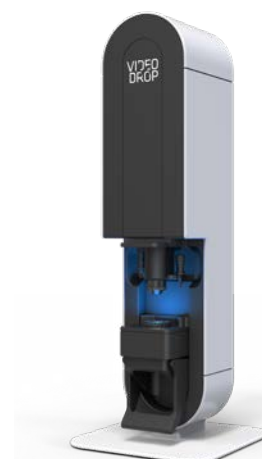
**Extracellular vesicles (EVs), natural biological messengers, are unlocking new therapeutic possibilities with their ability to deliver biomolecules with precision.** The production of EVs is rapidly emerging as a significant area of interest, with researchers and companies developing innovative methods to isolate, purify, and engineer these vesicles for specific applications (cancers, immune disorders, inflammatory diseases).

## Workflow



## ADVANTAGES

- For process development scientists, Videodrop is an ideal tool to establish an **optimized production and purification process**. With yield calculations and recovery analysis, it becomes **easy to refine** each step of the EVs bioproduction process.
- The speed and ease of use of the Videodrop enable **real-time in-process controls** for EVs bioproduction directly on the production line.
- Moreover, Videodrop is relevant in **stability study to optimize buffer and storage conditions**.
- The system's absence of fluidic components makes it **the only one capable of measuring EVs in viscous samples such as hydrogel**.





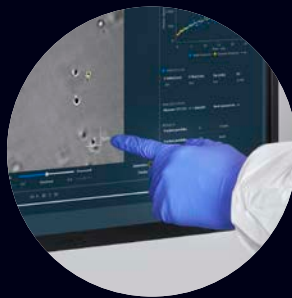
# VIDEO DROP

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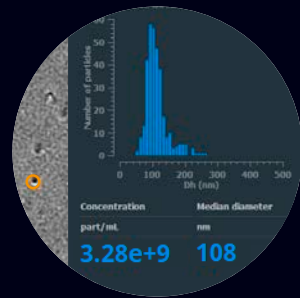
Measuring  
Size & Concentration  
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IN A SINGLE DROP



IN REAL TIME



REPRODUCIBLE RESULTS

[myriadelab.com](http://myriadelab.com)