Agenda

1. Introduction of Tebubio and Speaker

2. Complete Proteomic Analysis Workflow

3. Sample sourcing & In vitro model development

4. Target Identification

5. Bioanalysis

6. What's more..

7. Live Q&A session

tebubio

1.

Who are we ?

tebubio

We facilitate Life Sciences Research everyday

and contribute to a brighter future

We are Pan-European

- Founded in 1953
- Family-owned
- 100+ Employees
- Local offices across Europe

We Act for Life Sciences

- Innovation is in our DNA
- Contract Research Services Lab
- Part of EU Life Sciences ecosystems

Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

FRANCE 2030

MUR
Ministero dell'Università e della Ricerca

obn

bpifrance

ASE BIO

BIO DEUTSCHLAND

We Care

- Ethical, compliant and transparent sourcing (from OEMs only)
- Animal welfare policy
- Corporate Social Responsibility (ISO 14001 / ISO 9001, Decarbonation Program)

With Tebubio, advance your Research Projects faster

Thanks to our Holistic Range of Solutions

Order advanced biological solutions	+	Outsource and Accelerate research	+	Streamline your ordering process

A large portfolio

Access to **over 1,300,000 standard** references and **non-catalogue** ones.

From trusted & ethical suppliers

Get solutions from **reputable global suppliers**, carefully selected for their **relevance**, **ethical** and **legal** compliance (e.g. Animal Welfare).

Dedicated scientific support

Our **Scientific Team** guides you to source, select and use solutions.

Based in Europe

Our **Teams** and **Contract Research Services Lab** are in Europe.

Team committed to success

A **PhD project manager** ensures the success of your project from A to Z.

Strong expertise in Life sciences

- **mRNA** production & delivery
- **Cell line** engineering & **protein** production
- **Cellular studies**
- **Biomarkers** & Biostatistics analysis

Reliable Supply Chain Management

- **IATA**
- **Human/Animal Biological Solutions**
- **Sourcing outside** existing suppliers
- **Warehousing** services

Order from a single source

Consolidate your orders with us.

Tailored agreements

From specific **one-off terms** to **procure-to-pay**, supported by **e-procurement** solutions.

Proprietary & Confidential

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Our Speaker

Marie Morin, PhD

CRS Laboratory Project Manager

- Marie Morin joined Tebubio in 2023 as a Project Manager on the Biostats Platform. With a robust academic background, including a Ph.D. in Genomic and Transcriptomics analysis from the University of Queensland, she brings deep expertise in molecular and cellular biology, biomarker analysis, Bioinformatics and Biostatistics analysis.

- Marie has contributed to innovative research, gaining invaluable insights through her roles at leading research institution, as well as through her published work in scientific journals.

- At Tebubio, Marie now leverages her expertise to guide clients in optimizing their biomarker studies, from experimental design to advanced statistical analysis.

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2.

Proteomic Analysis Workflow

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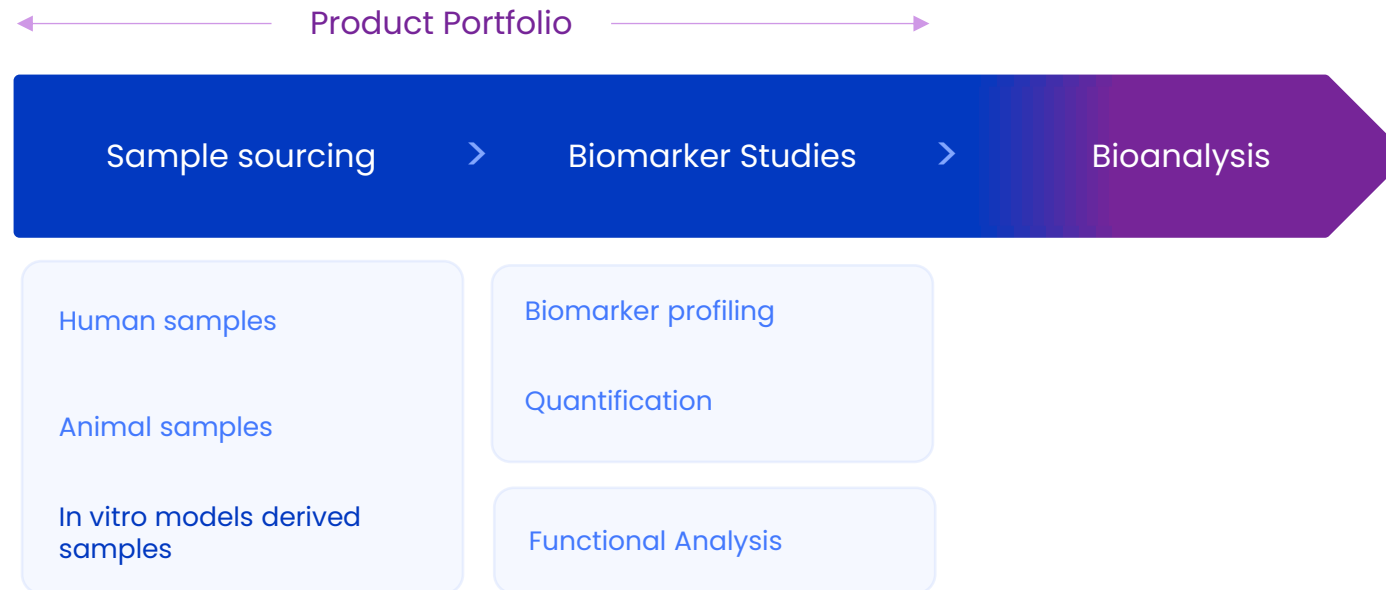# Tebubio can support you throughout your entire proteomic analysis
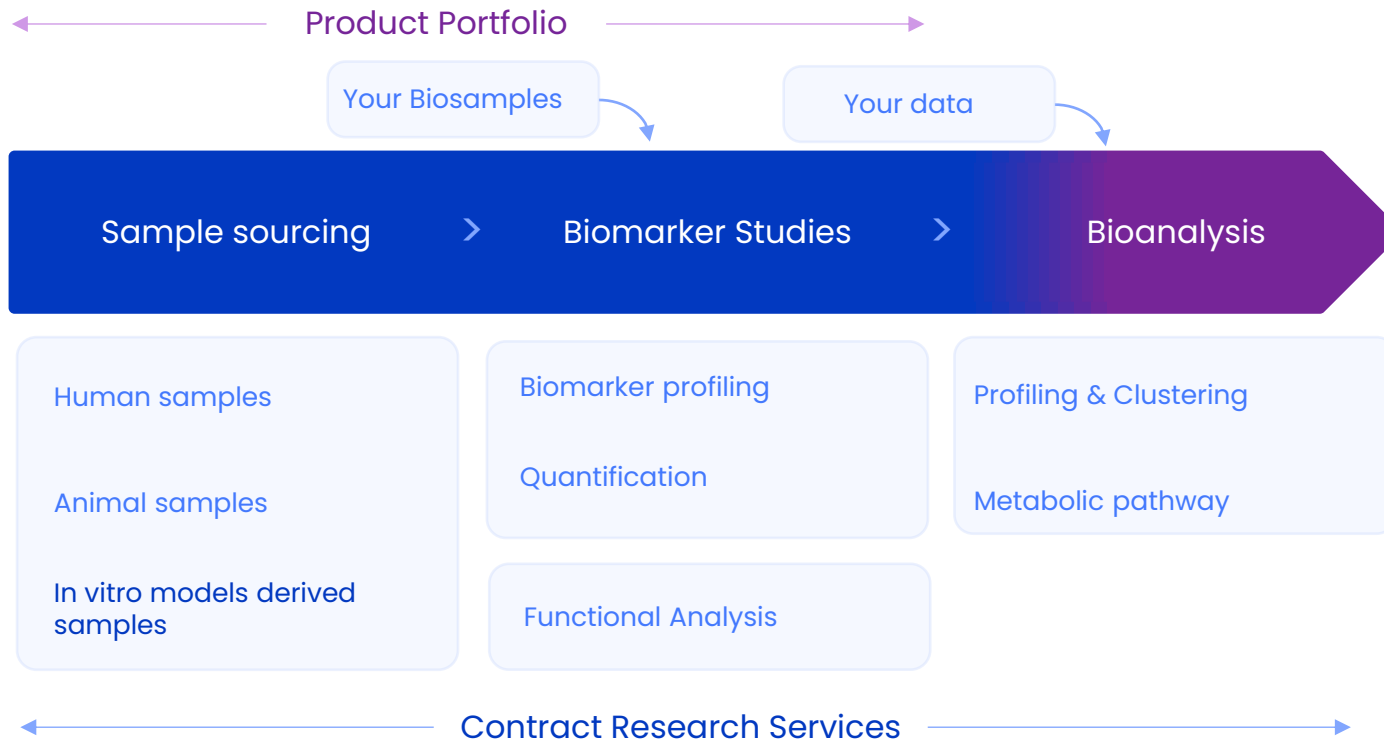
Sample sourcing > Biomarker Studies > Bioanalysis

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Tebubio can support you throughout your entire proteomic analysis

Product Portfolio

Sample sourcing > Biomarker Studies > Bioanalysis

Human samples

Animal samples

In vitro models derived samples

Biomarker profiling

Quantification

Functional Analysis

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Tebubio can support you throughout your entire proteomic analysis

← Product Portfolio →

Sample sourcing >	Biomarker Studies >	Bioanalysis
Human samples Animal samples In vitro models derived samples	Biomarker profiling Quantification Functional Analysis	Profiling & Clustering Metabolic pathway

← Contract Research Services →

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Tebubio can support you throughout your entire proteomic analysis

Product Portfolio

Your Biosamples

Your data

Sample sourcing > **Biomarker Studies** > **Bioanalysis**

Sample sourcing	Biomarker Studies	Bioanalysis
Human samples	Biomarker profiling	Profiling & Clustering
Animal samples	Quantification	Metabolic pathway
In vitro models derived samples	Functional Analysis	

Contract Research Services

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3.

Sample Sourcing & Model development

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Tebubio can support you from sample sourcing to model development

Product Portfolio

Sample sourcing	Biomarker Studies	Bioanalysis
Human samples	Biomarker profiling	Profiling & Clustering
Animal samples	Quantification	Metabolic pathway
In vitro models derived samples	Functional Analysis	

Contract Research Services

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Get the Biological models you need

Two Solutions

Human and Animal Sample Sourcing

To provide you an easy, legal and Ethical access to the sample you need

Healthy or diseased

Fresh, Frozen, Cryopreserved

Tissue (FFPE, TMA…) / Blood (Plasma, PBMC..)

Cells (Primary, iPSC..) / Dissociated Tissue Cells

Inventory or Collection Prospective

Ethic & legal sourcing / Clinical data

Import permit and CITES management

In vitro cell culture platform

TBD

2D / 3D cell culture

Spheroids / Organoids

Co-culture

Microfluidics

Live microscopy

Pancreatic islets

Drug screening

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Get the Biological models you need

Two Solutions

Human and Animal Sample Sourcing

To provide you an easy, legal and Ethical access

In vitro cell culture plateform

TBD

Want more information's on our in vitro development platform and capabilities ?

Healthy or diseased

Fresh, Frozen, Cryopreserved

2D / 3D

Spheroids

Ask to receive the recording of our last webinar

Tissue (FFPE, TMA...) / Blood (Plasma, PBMC..)

Cells (Primary, iPSC..) / Dissociated Tissue Cells

Live mi

Pancre

Drug screening.......

Inventory or Collection Prospective

Ethic & legal sourcing / Clinicaldata

Import permit and CITES management

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4.

Target Identification

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Tebubio can support you in your target identification

Product Portfolio

Your Biosamples

| Sample sourcing | > | Biomarker Studies | > | Bioanalysis |

Human samples

Animal samples

In vitro models derived samples

Biomarker profiling

Quantification

Functional Analysis

Profiling & Clustering

Metabolic pathway

Contract Research Services

tebubio

Validate your biological hypothesis

Streamline the discovery of unique biomarker signatures in your research model for faster, more precise insights.

What you focus on	**Our Solution**	**Your results**
Secretome Inflammation Cytokine Storm Phosphorylation Disease focused array And much more...	Access to Multiplexing solutions **for up to 8000 targets.** Customizable array. All **types of samples** can be treated (Tissue/cell, body fluids, cell media, organoïd) **Inter and Intra groups** comparison **Drug exposure analysis** **Glycobiology study** with Lectin and glycan arrays	Get your data (differential expression analysis between samples) *or* Use our DATA Analysis services (heat map – clustering & metabolic pathway analysis) (Biostats platform)

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Case Study: cytokine secretome analysis in blood

Project

Secretome comparison in blood samples collected during 2 years of clinical trial, evaluating the effect of givinostat (histone deacetylase (HDAC) inhibitor) in patients with Becker muscular dystrophy.

Customer pain point

No human resource, no internal skill, no scanner to perform the assay, no biostatistician able to analyze data.

Solution

- 150 serum analyzed by using our kiloplex cytokine antibody array targeting 1000 proteins.

- This panel was the most complete on the market, so the solution offered was the best available at that moment.

- The collection of those data would have been impossible otherwise.
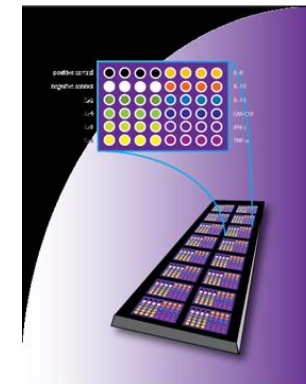
Blueprint of the glass slide antibody array

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Case Study: cytokine secretome analysis in blood

Conclusion & added value

- Normalization of raw data, differential expression analysis of detected targets and biostatistical analysis including cluster and pathway analysis showing the biomarker changes along with the treatment of the Givinostat.

- Results enrich the documentation of the drug for the regulatory agencies (EMA, FDA)
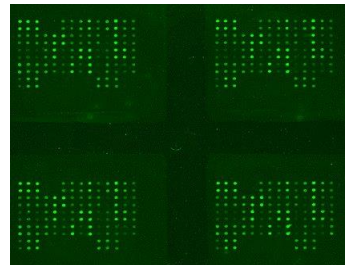
Example of
array image
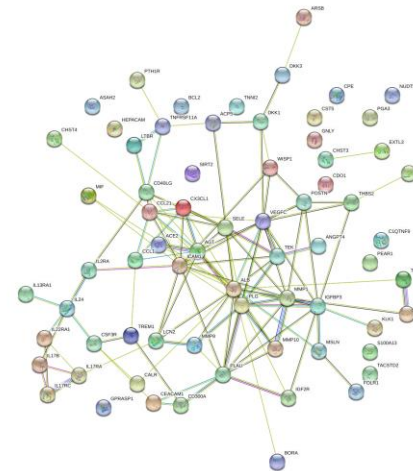
Protein-protein interactions among
differentially-expressed targets (p<0.05)

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Tebubio can support you in your target identification

Product Portfolio

Your Biosamples

| Samples sourcing | > | Biomarker Studies | > | Bioanalysis |

Samples sourcing
- Human samples
- Animal samples
- In-vitro models derived samples

Biomarker Studies
- Biomarker profiling
- Quantification
- Functional Analysis

Bioanalysis
- Profiling & Clustering
- Metabolic pathway

Contract Research Services

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Case Study: cytokine released by 3D stem cells.

Project

3D-cultures of human Bone Marrow-Derived Mesenchymal Stem Cells as in vitro tissue regenerative model. These constructs were bioprinted with a bioink containing 50% PPP (Platelet Poor Plasma) or 50% PRP (Platelet Rich Plasma) and cultured with and without inflammatory cytokines.

Customer pain point

No internal skill, no scanner to perform the assay

Solution

- 16 conditioned media from 3D-cultures.

- quantification of 440 proteins by using our Quantibody® Human Cytokine Antibody Array 440.

- This panel was the best compromise between cost and the number of cytokines available

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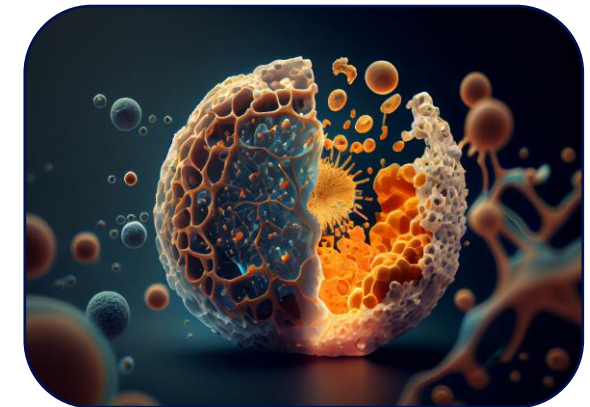
Case Study: cytokine released by 3D stem cells

Conclusion & added value

- For this project the normalization of raw data, differential expression analysis of detected targets and group analysis, have confirmed the positive effect of PRP on tissue repair.
- Gain of time and human/financial ressources for the customer
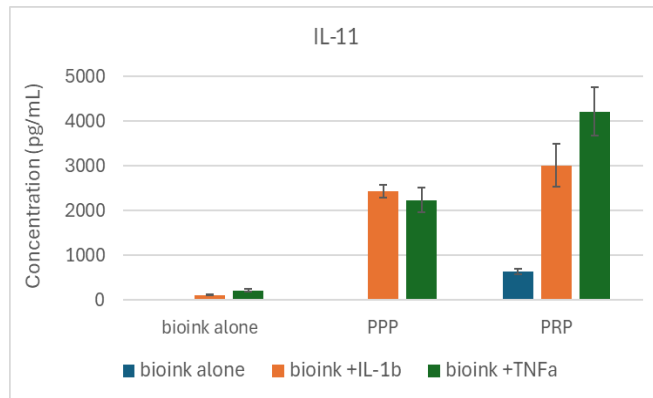
IL-11 induces osteoblast differentiation
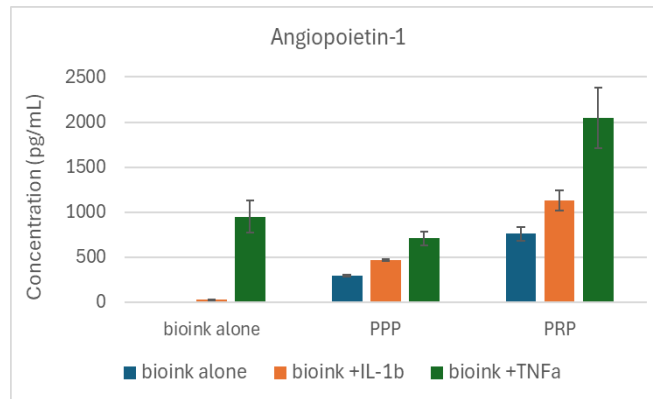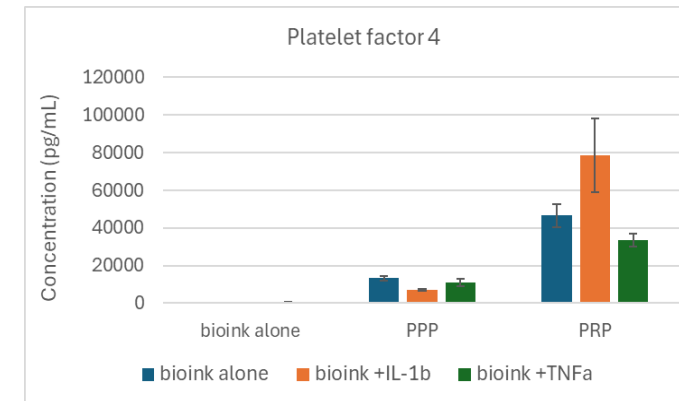
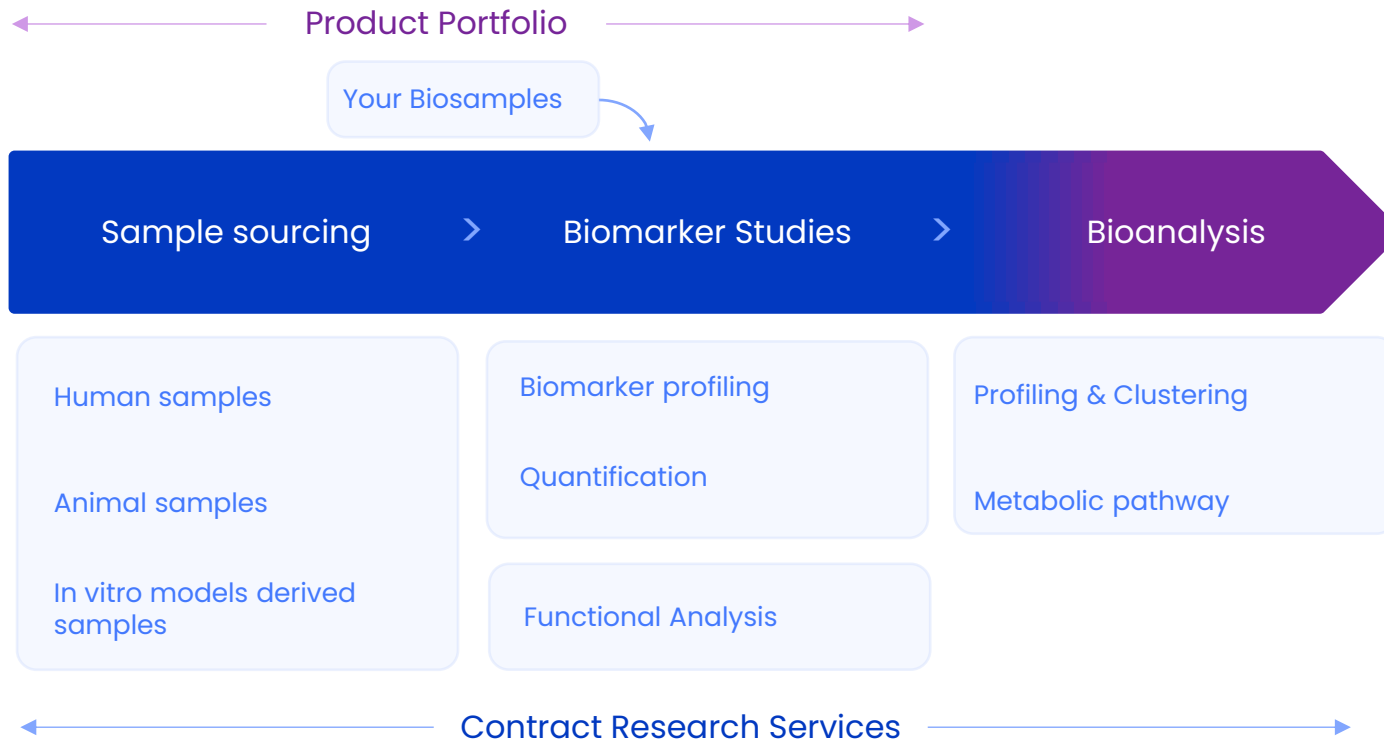Anti angiogenic factor
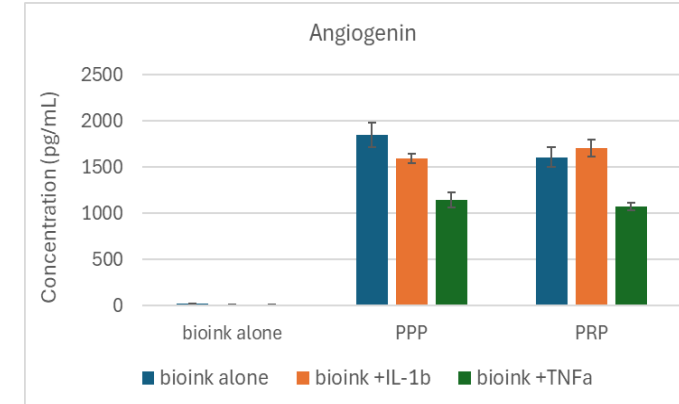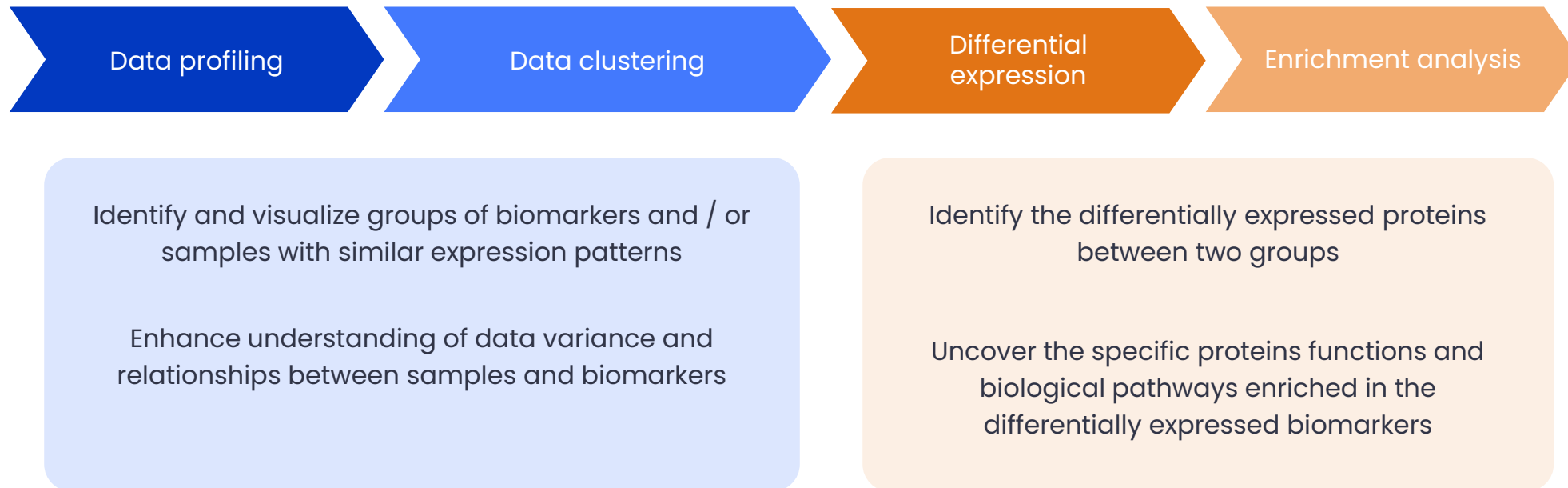

Pro angiogenic factor

Pro angiogenic factor

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5.

Data analysis

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Tebubio can support you in your target identification

Product Portfolio

Your Biosamples

| Sample sourcing | > | Biomarker Studies | > | Bioanalysis |

Human samples

Animal samples

In vitro models derived samples

Biomarker profiling

Quantification

Functional Analysis

Profiling & Clustering

Metabolic pathway

Contract Research Services

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Consolidate your results with Bioanalysis

To transform large, multidimensional biomarker data into meaningful results to guide future research

Data profiling	Data clustering	Differential expression	Enrichment analysis

Data profiling / Data clustering

Identify and visualize groups of biomarkers and / or samples with similar expression patterns

Enhance understanding of data variance and relationships between samples and biomarkers

Differential expression / Enrichment analysis

Identify the differentially expressed proteins between two groups

Uncover the specific proteins functions and biological pathways enriched in the differentially expressed biomarkers

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Data Profiling & Clustering

Unveiling biological patterns

Data profiling → Data clustering → Differential expression → Enrichment analysis

Heatmap:

Visual representation of biomarker groups with similar expression profiles, facilitating pattern discovery

Principal Component Analysis (PCA):

Reduces data complexity, helping identify the most significant contributors to biological variations

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Differential Expression & Pathway Enrichment Analyses

Translating Data into Biological Insights

Data profiling → Data clustering → **Differential expression** → Enrichment analysis

Differential Expression Analysis:

Identify genes or proteins that show significant expression changes between two conditions

- Down-regulated
- Up-regulated
- Non-differentially expressed

Pathway Enrichment Analysis (GO & KEGG):

Determine which biological pathways and processes are most impacted by experimental conditions through GO and KEGG enrichment analysis

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6.

What's more...

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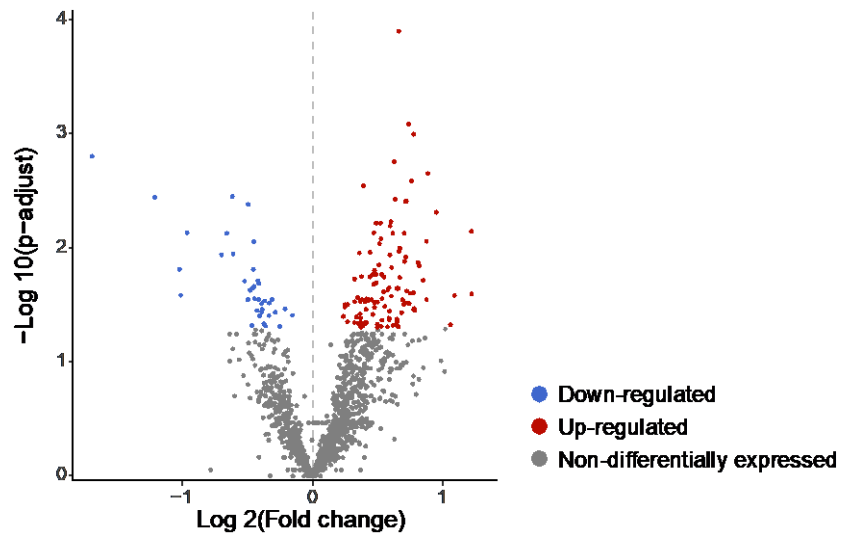
Dive into Complementary analysis

Two Solutions

Target Activity

Thanks to our bioassay services for drug screening or drug MoA discovery

General Omics Analysis

Inhibitor/activator screening assay

Impact of your entities on enzyme activity

Impact of your entities in binding assay

Nuclear receptor screening assay

From cell pellet (yours or treated in our lab), tissue or already extracted total RNA.

Extraction of total RNA (including miRNA)

Differential gene/miRNA expression analysis

PCR arrays for pathway-focused gene expression analysis

Analysis your NGS data (from your own data)

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7.

Go home Message

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Support you all along your Proteomics project

Complete Support all along your project

From model development to your target identification and the final Biostatistics analysis

Advanced Biomarker and Biostatistics Platform

With cutting-edge tools to accelerates biomarker discovery and validation.

Tailored Solution with a Dedicated Contact

Benefit from our experts guidance, ensuring reliable and reproducible results tailored to your specific needs.

Flexible and Comprehensive Services

Use your own protocol or develop one with our experts, along with complementary services like mRNA production and in vitro models development

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Facilitators of Life Sciences Research

Questions ?

Support you all along your Proteomics project

Product Portfolio

Samples sourcing > Target identification > Bioanalysis > xx > xx

Contract Research Services
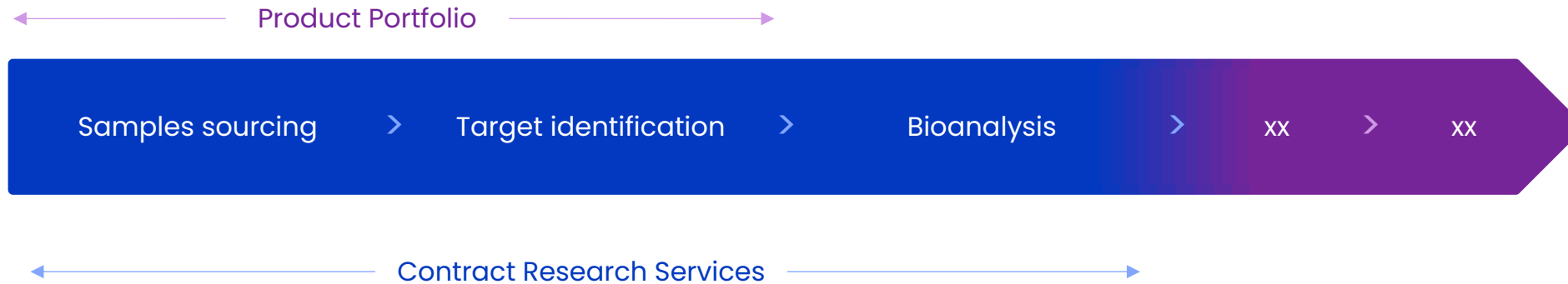
✓ Unique combination or reagents and contract research services

✓ Speed up your projects thanks to a complete pipeline of CRS

✓ Access support, expertise and quality with your dedicated project manager (notion de reproducibilité , connaissance des outils (gain de temps et d'argent..)... a intégrer

✓ Flexibility: Come with your protocol or build it with our project manager

✓ Complementarity: Combine with other CRS plateform (RNA – In vitro model..)

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Case Study: Inhibitor screening on Cell-based assay (MTS platform)

Aim

Compounds Screening as Superoxide dismutase inhibitors.

Project

Cells : neuroblastoma cell line as disease model.

Cellular test: Plates containing the compounds provided by the customer were seeded with cells and incubated for 48h. At the end of the incubation, the cells were lysed.

Readout: images of each well were provided. Superoxide dismutase ELISA was performed on lysates. All these steps were done by using an Eppendorf epMotion 5075.

Conclusion: few thousand compounds screened and dose response performed on selected ones.

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Consolidate your results with Bioanalysis

Aim: To transform large, multidimensional biomarker data into meaningful results to guide future research

Data Profiling & Clustering

- Data filtration and normalization
- Identify and visualize groups of biomarkers and or / samples with similar expression patterns

Differential expression & enrichment analysis

identify the differentially expressed proteins between two groups

uncover the specific proteins functions and biological pathways enriched in the differentially expressed biomarkers

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Data Profiling & Clustering

Unveiling biological patterns

Comprehensive profiling of biomarker data, enabling the identification of patterns, similarities and groupings within dataset

Enhanced understanding of data variance and relationships between samples and biomarkers
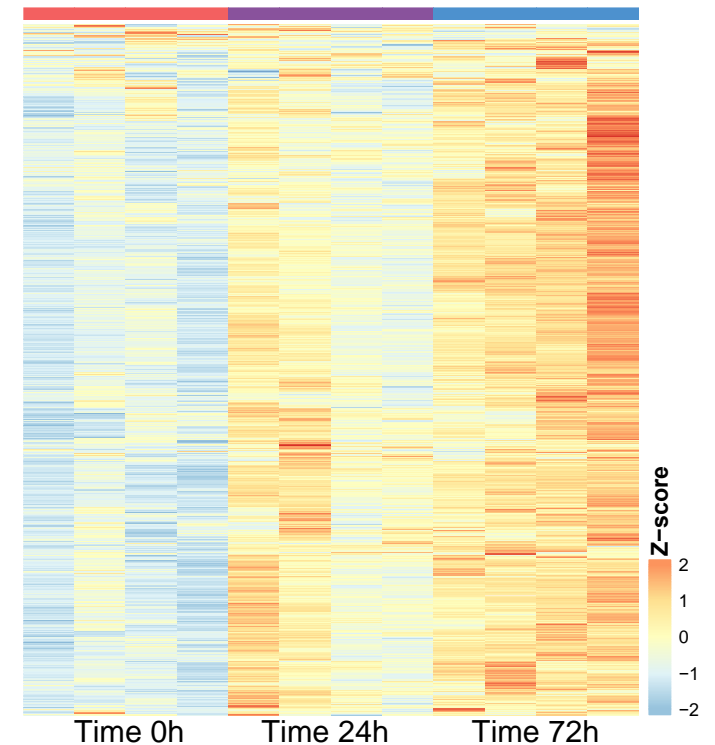
Principal Component Analysis (PCA):
Reduces data complexity, helping identify the most significant contributors to biological variations

Heatmap:
visual representation of biomarker groups with similar expression profiles, facilitating pattern discovery
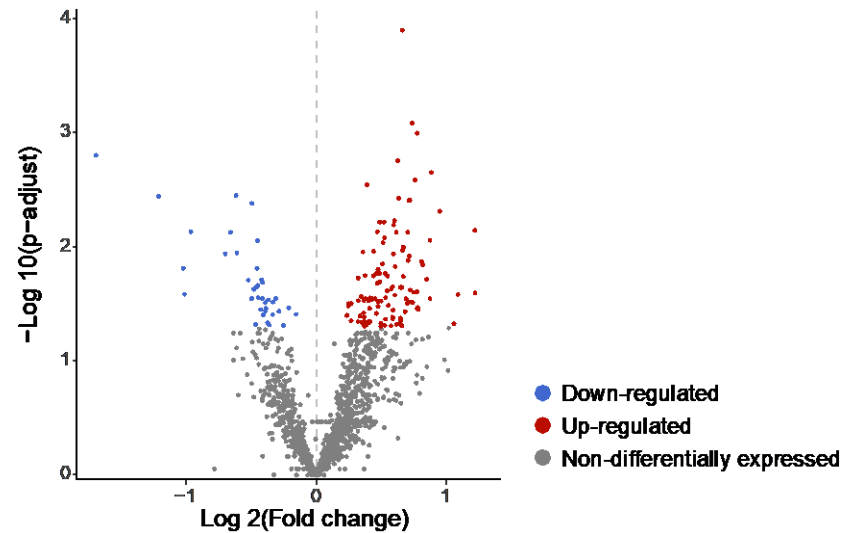
tebubio
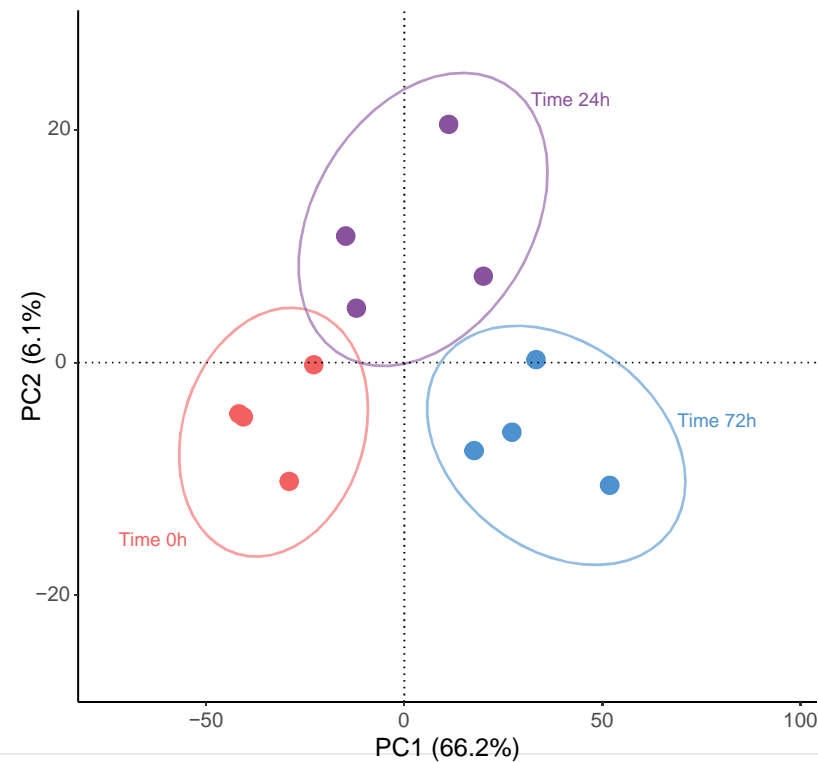
Differential Expression & Pathway Enrichment Analyses

Translating Data into Biological Insights

Understand how experimental conditions impact gene expression and uncover which biological pathways are involved
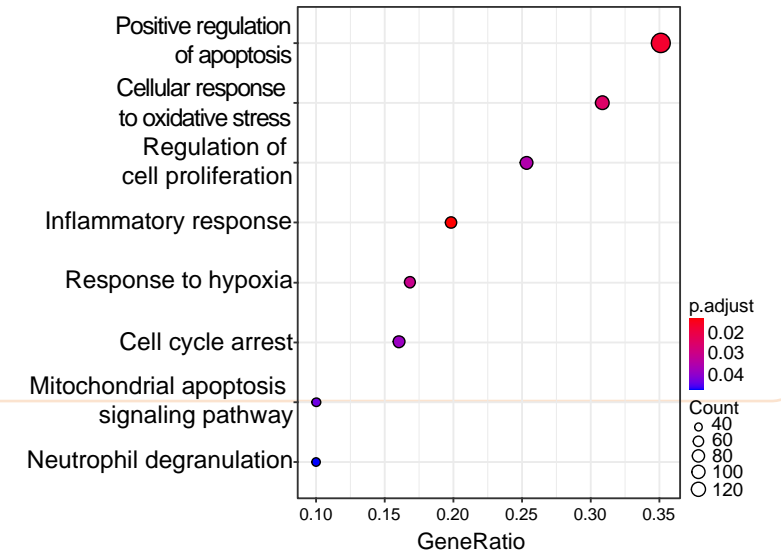
Differential expression Analysis

Identify genes or proteins that show significant expression changes between two conditions

Pathway enrichment analysis (GO & KEGG)

Determine which biological pathways and processes are most impacted by experimental conditions through GO and KEGG enrichment analysis.

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Dive into your target activity

Thanks to our bioassay services for drug screening or drug MoA discovery

For inhibitor/activator screening:

Study the impact of your drugs / substance on enzyme activity

Study the impact of your drugs / substance in binding assay

Nuclear receptor screening assay

All the functional assays available in our portfolio

All assays based on absorbance, luminescence, fluorescence, FRET, TR-FRET, fluorescence polarization (FP) readouts may be implemented

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Dive into general Omics analysis

Based on Genecopoeia and Qiagen PCR arrays for pathway-focused gene expression analysis

Starting from cell pellet, tissue or already extracted total RNA. Cells can also be treated in our lab:

- Extraction of total RNA (including miRNA for miRNA expression study)
- PCR array processing by PCR
-   Differential gene/miRNA expression analysis

Starting from your data we can also support you to:
- Analysis your NGS data

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