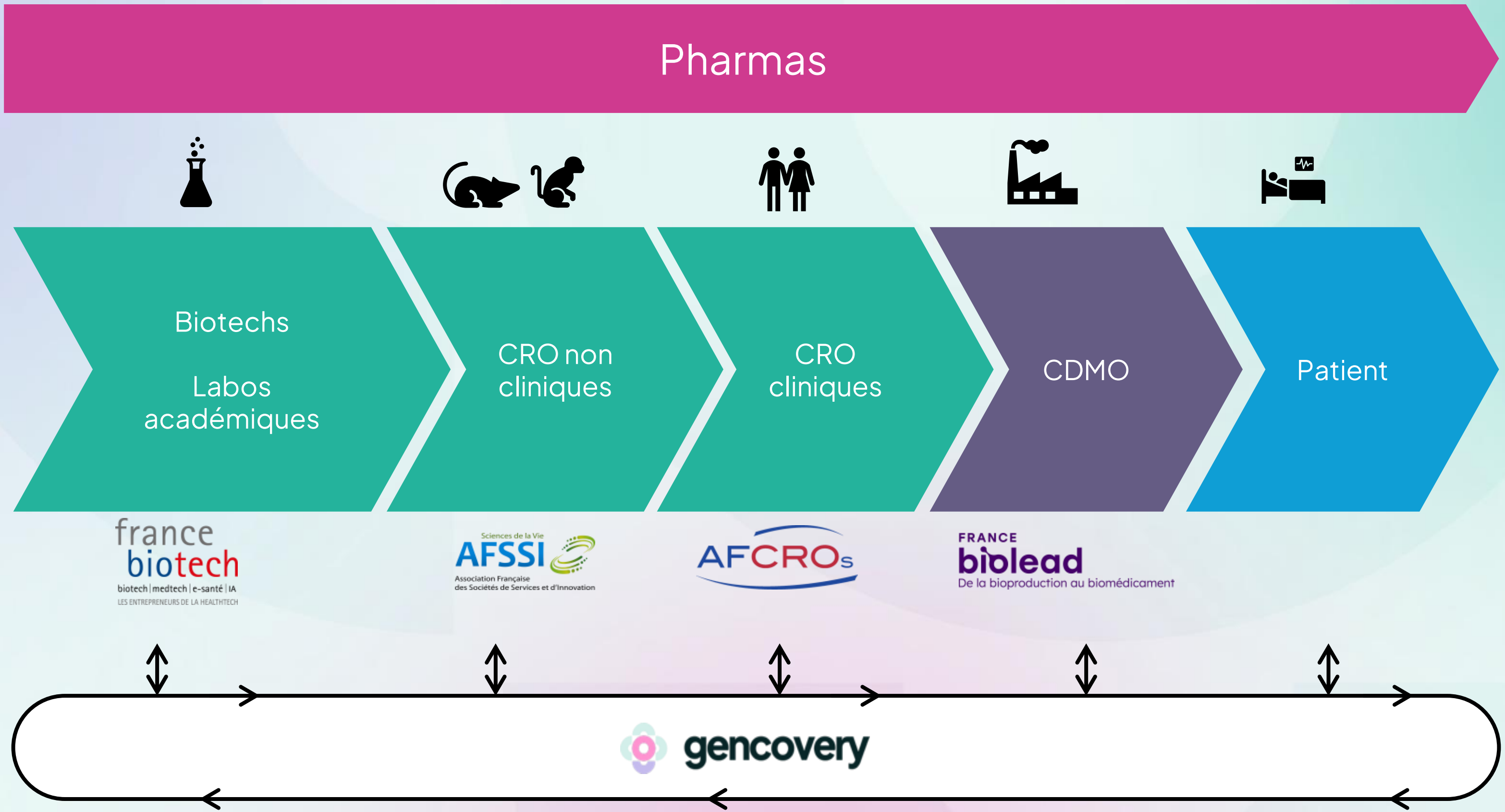
La plateforme d'IA européenne au service de la biotechnologie

CROPulse : Plateforme d'échange numérique de confiance pour la valorisation des données et services innovants en science de la vie et santé

La R&D pharmaceutique est largement sous-traitée



La prestation des CROs est essentielle

- Les CROs non cliniques sont un maillon essentiel dans la chaine de sous-traitance
  - 100% des médicaments passent par les CROs
  - +300 CROs non cliniques en France
  - 3,4 Mds € de CA en France
  - Essentiellement des PME/ETI et très peu digitalisées
  - Elles génèrent des quantités importantes de données pour elles-mêmes et leurs clients et n’arrivent pas à les utiliser efficacement pour livrer leurs services

Enjeux et problématiques

Humains & culturels	▪ Faible culture data ▪ Manque de formation & résistance au changement
Organisationnels & collaboratifs	▪ Difficulté à fédérer ▪ Hétérogénéité & Manque de standards
Technologiques	▪ Crainte du cloud ▪ Manque d’outils et d’interopérabilité
Réglementaires & éthiques	▪ Cadres complexes ▪ Contraintes IA/NAMs

Solution CROPulse : Digitaliser les CROs non cliniques – PMEs

Accélérateurs transversaux

- Métiers
- Cloud

3R / NAMs

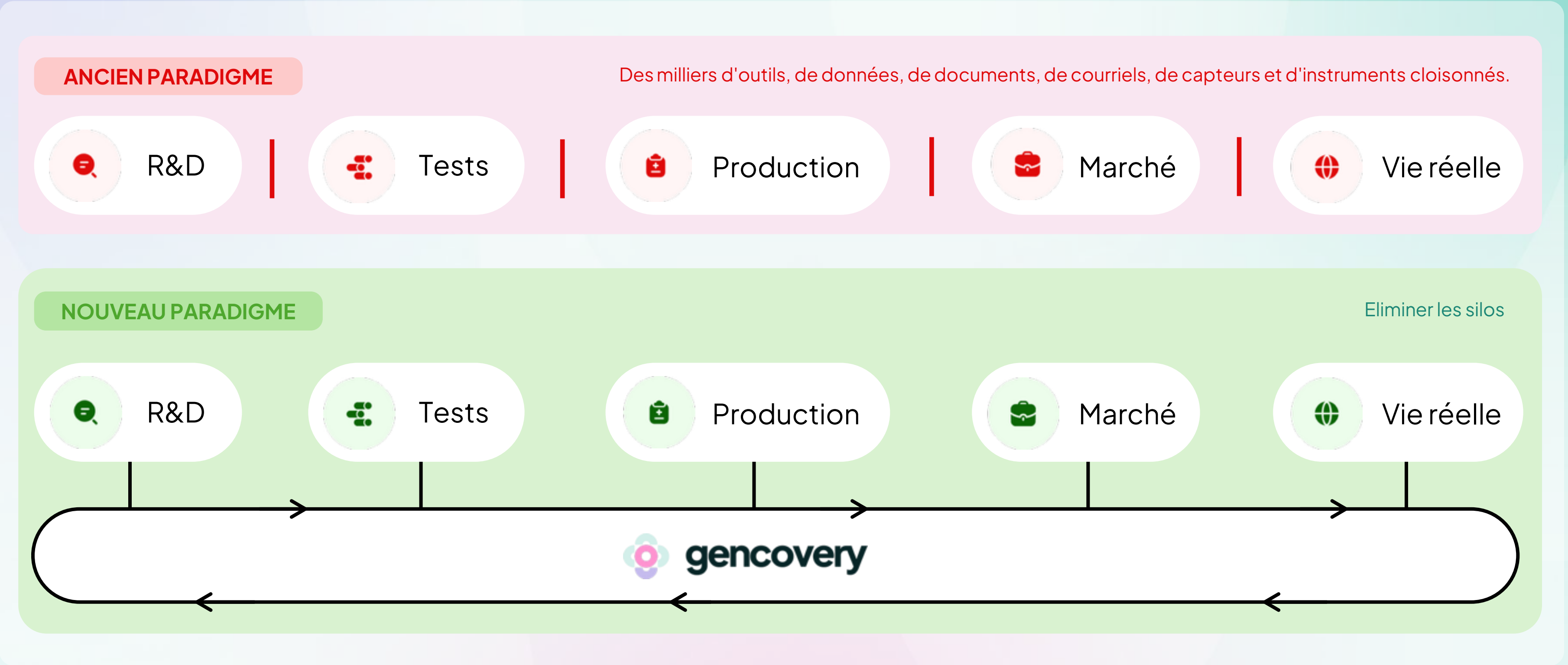
Bras synthétiques
Jumeaux numériques, Modèles IA

Solutions métiers

5. Service — Rapports et livraison
4. Projet — Planning, Gestion des équipes
3. Contractualisation — Marketplace 3.0
2. Découverte — IA générative / Assistant de R&D
1. Consolidation — Harmonisation des données

Plateforme Constellab™ de Gencovery

Constellab ™ : Hyper-connecter et rationaliser toutes les étapes de la chaîne de valeur



constellab community

ACCÉLÉRATION CROPULSE

Plateforme d’échange de données et services

OUTILS EXTERNES

- LIMS
- CRM
- Data lakes

NOTRE PLATEFORME

- Data hubs
- Data links
- Data pods

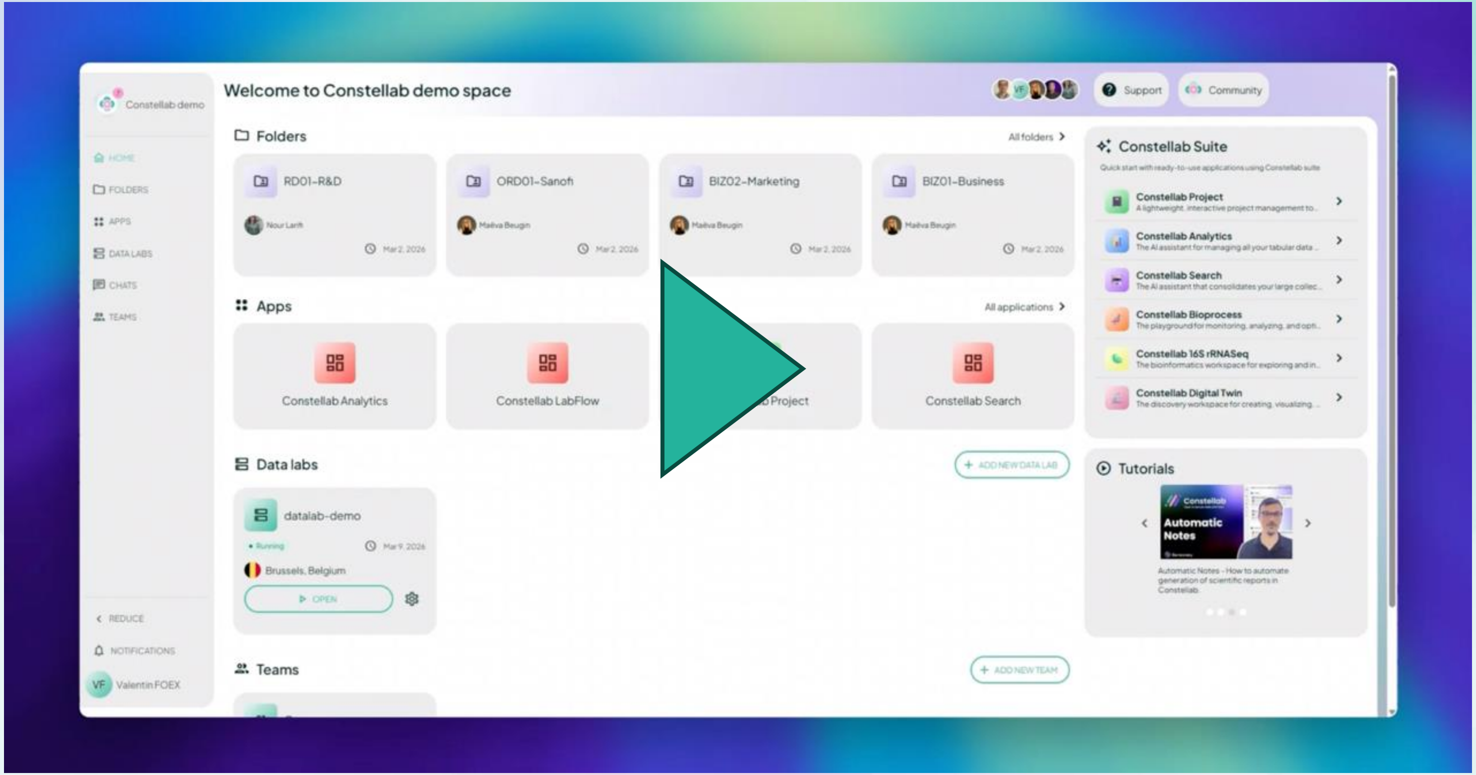
constellab space

Centré sur l'humain, collaboratif pour toutes les infrastructures en nuage et sur site

ACTEURS

- Partenaires
- Collaborateurs
- Clients
- Chercheurs
- Médecins
- Patients

Constellab Tour



https://www.youtube.com/watch?v=HELmppZCBrk&feature=youtu.be

Retour d'expérience de CROs

Sébastien Tabryun
CEO TransCure bioServices

TransCure bioServices

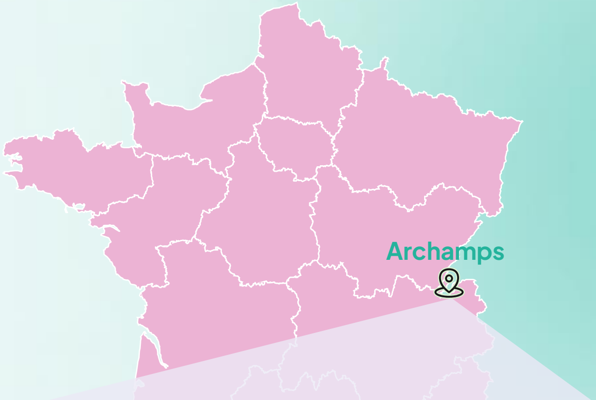
Maxime Fontanié
CEO Vibiosphen

VIBIOSPHEN
From microbes to One Health

TransCure bioServices
A Taconic Biosciences™ Company

CRO with a global reach:

- Fee-for-service, early preclinical, and IND-enabling preclinical projects
- Short lead times, flexibility, competitive pricing
- **Acquired by Taconic Biosciences**



14 years of preclinical work with humanized mice:

- Global clientele: Big pharma, biotech and academia in US, Europe, Australia
- 1000+ sponsored projects completed
- 22,000+ humanized mice used for sponsored projects
- Scientific team with 150+ combined years of preclinical expertise

Substantial infrastructure and expertise under one roof:

- SOPF animal facility with BSL-2 and BSL-3 zones
- Capacity for 10,000 mice (all in individually ventilated cages)
- In vitro laboratory with with BSL-2 and BSL-3 zones
- Dedicated cores facilities for flow cytometry, histology, and molecular biology
- High ethical standards and AAALAC accreditation since 2022

PROUD TO BE AN aaalac INTERNATIONAL ACCREDITED PROGRAM

Humanized Research

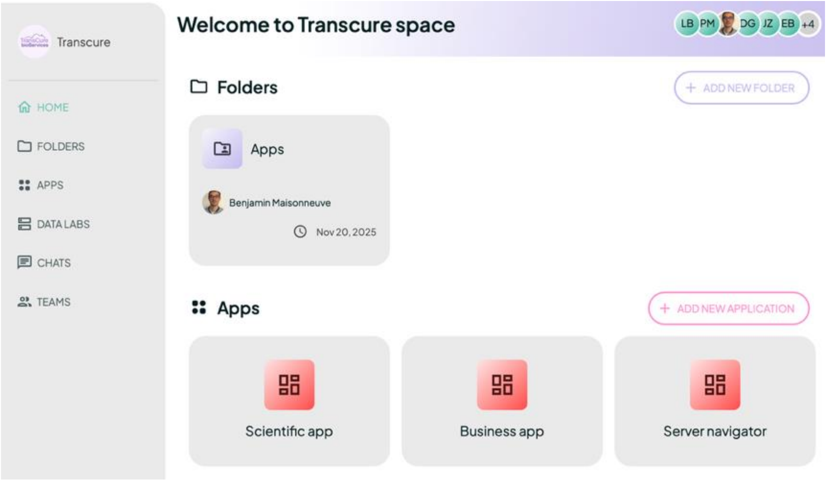
- TransCure bioServices

We do **not provide** animals
We do **not provide** disease models

We provide DATA

Building expertise on DATA

Developed by gencovery



Constellab permet d’interroger nos données historiques (rapports d’étude, updates, study protocoles) et d’en extraire des données digérées et contextualisées afin d’améliorer la qualité de travail de nos Field Application Scientists et Alliance Managers

Designing a new study protocol

Design a typical study with MDA-MB-231 in humanized mice

1. Mouse Model Selection and Humanization

- Female NOD/Shi-scid/IL-2Rγnull immunodeficient mice (NCG) are used.
- Mice are humanized by engrafting with human CD34+ hematopoietic stem cells, typically isolated from cord blood.
- Humanization is confirmed 14 weeks post-engraftment by flow cytometry; only animals with a humanization rate (hCD45/total CD45) above 25% are included in the study.
- Animals enter the study between 15–18 weeks post-engraftment and must weigh at least 20 g at study start ⓘ ⓘ .

2. Tumor Cell Engraftment

- MDA-MB-231 breast cancer cells are injected subcutaneously or into the mammary fat pad.
- A typical inoculum is 5 x 10^6 tumor cells per mouse, resuspended either in PBS or a mixture of PBS and Matrigel (commonly 50% each), depending on experimental requirements ⓘ .
- Tumors become measurable within approximately 5 days after engraftment ⓘ .

3. Randomization and Treatment Initiation

- Once tumors reach a predetermined volume (e.g., ~50–124 mm³), usually around day 20 post-engraftment for MDA-MB-231, mice are randomized into treatment groups to ensure balanced tumor sizes across groups ⓘ ⓘ .

4. Treatment Regimens Example regimens include:

- Monoclonal antibodies (e.g., pembrolizumab or atezolizumab): administered intravenously at doses such as 2 mg/kg or 10 mg/kg, twice weekly ⓘ .
- Experimental compounds or bispecific antibodies can be administered via intravenous or intratumoral injection, with dosing schedules such as D0, D3, D6 post-randomization ⓘ .
- Vehicle controls and isotype controls are included.

5. Monitoring and Endpoints

- Tumor growth is measured two to three times per week using calipers; volumes calculated using standard formulas.
- Body weight and clinical scores are monitored regularly to assess toxicity.
- Survival is tracked; ethical endpoints include tumor size limits (~1500 mm³) or clinical deterioration ⓘ ⓘ .

6. Sample Collection

- Blood samples may be collected at baseline, during treatment cycles, and at sacrifice for immune profiling.
- At endpoint (typically ~28–31 days post-treatment initiation), tumors and organs (spleen, liver, lungs) are harvested for downstream analyses such as flow cytometry or biodistribution studies ⓘ .

7. Data Analysis

- Tumor growth inhibition is calculated relative to vehicle controls at defined time points (e.g., Day 26).
- Statistical analysis includes two-way ANOVA followed by appropriate post-tests for group comparisons ⓘ .

Retrieve historical data

Level of human gamma delta T cell in humanized mice

The level of human gamma delta (γδ) T cells in humanized mice varies depending on the model, tissue analyzed, and experimental conditions. The following data summarize findings from CD34+ humanized NOD/SCID/IL-2Rγnull mice across multiple tissues:

Peripheral Blood:

- The frequency of γδ T cells (TCRgd+) among CD3+ T cells is consistently low, typically below 10% at both pre-treatment (D-7) and post-treatment (D7) time points across different CD34+ cell donors ⓘ .
- Absolute numbers are not provided for blood, but the low percentage indicates a minor subset within the total T cell compartment.

Spleen:

- The proportion of γδ T cells among CD3+ T cells remains low (<5%) for all tested donors ⓘ .
- This is consistent with other rare populations such as MAIT and Th2 cells in this compartment.

Liver:

- The frequency of γδ T cells among CD3+ T cells is also low, generally <5% ⓘ .
- There is some inter-donor variability, but overall levels remain minor compared to other lymphocyte subsets.

Bone Marrow:

- In bone marrow, the percentage of γδ T cells among CD3+ T cells is very low or nearly absent for most donors; only one donor showed a value slightly above 5% ⓘ .

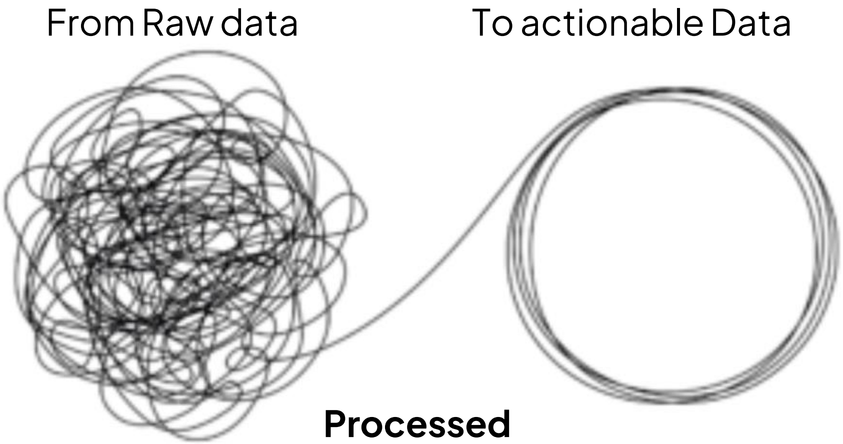
Tumor Tissue (Engrafted Models):

- In a separate study using IGROV-1 tumor-engrafted humanized mice, absolute counts of γδ T cells in tumors ranged from approximately 10^2 to 10^3 per gram of tissue—markedly lower than other immune populations such as hCD45+, CD3+, CD4+, and CD8+ T cells (which are typically in the range of 10^5–10^6 per gram) ⓘ .

Sources

- 22Q2106_Finalreport_05JUL2023_signed.pdf
- 21TCS_Q1717-Studyprotocol_V4-23APR2021_FE.pdf
- 22Q3173_Finalreport_04JUL2023.pdf

DATA



Collected

Processed
Analyzed
Contextualized

Informe
Decision

Retour d’expérience de CROs

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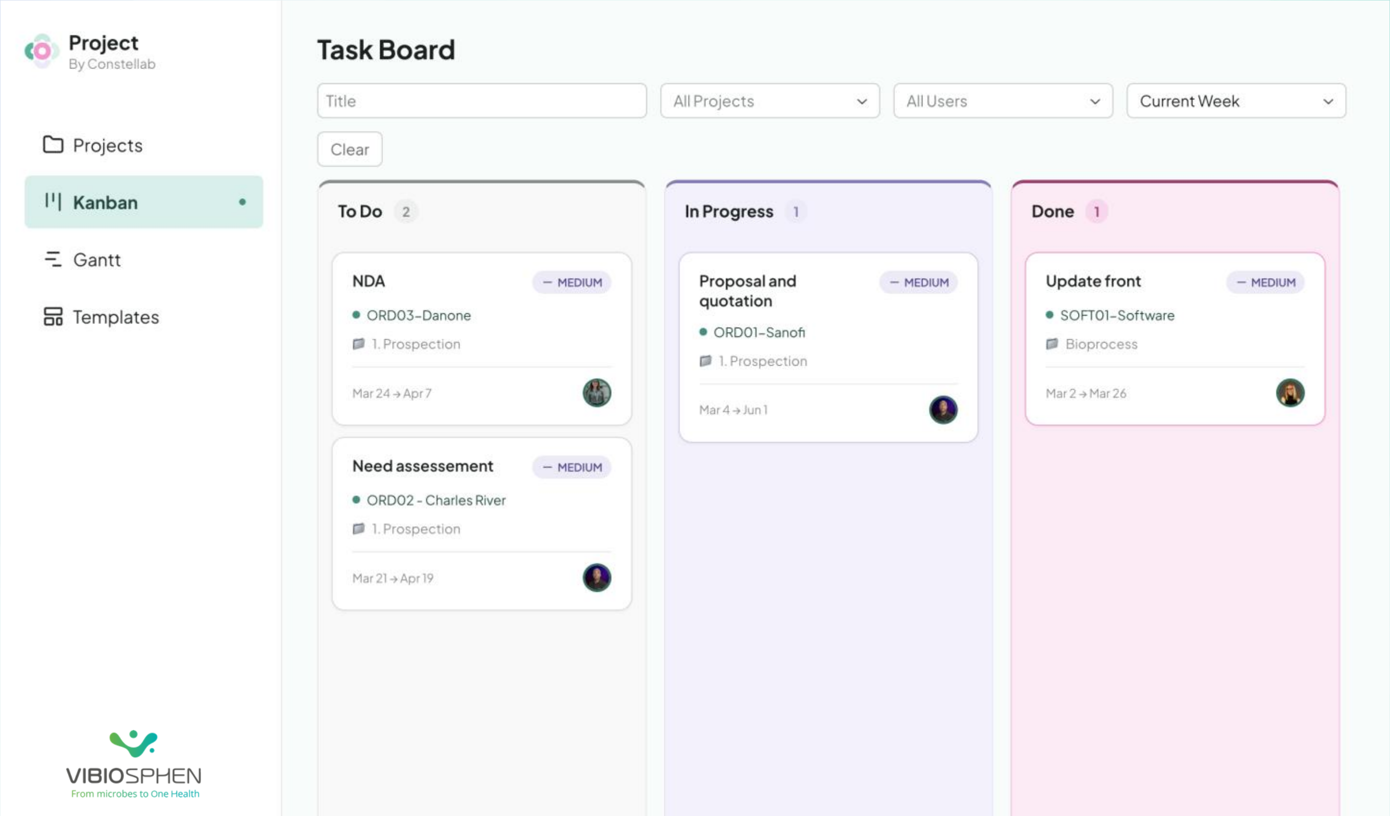
Constellab Project

Constellab Project



Equipe projet CROPulse

CRO non clinique – Business case, Archamps

Provider cloud de proximité, Lyon et France

Ecole d’ingénieurs Biotechnologie, Lyon et Paris

Grappe d’entreprises Biotechnologie, Archamps

Grappe d’entreprises Heath tech, Grenoble

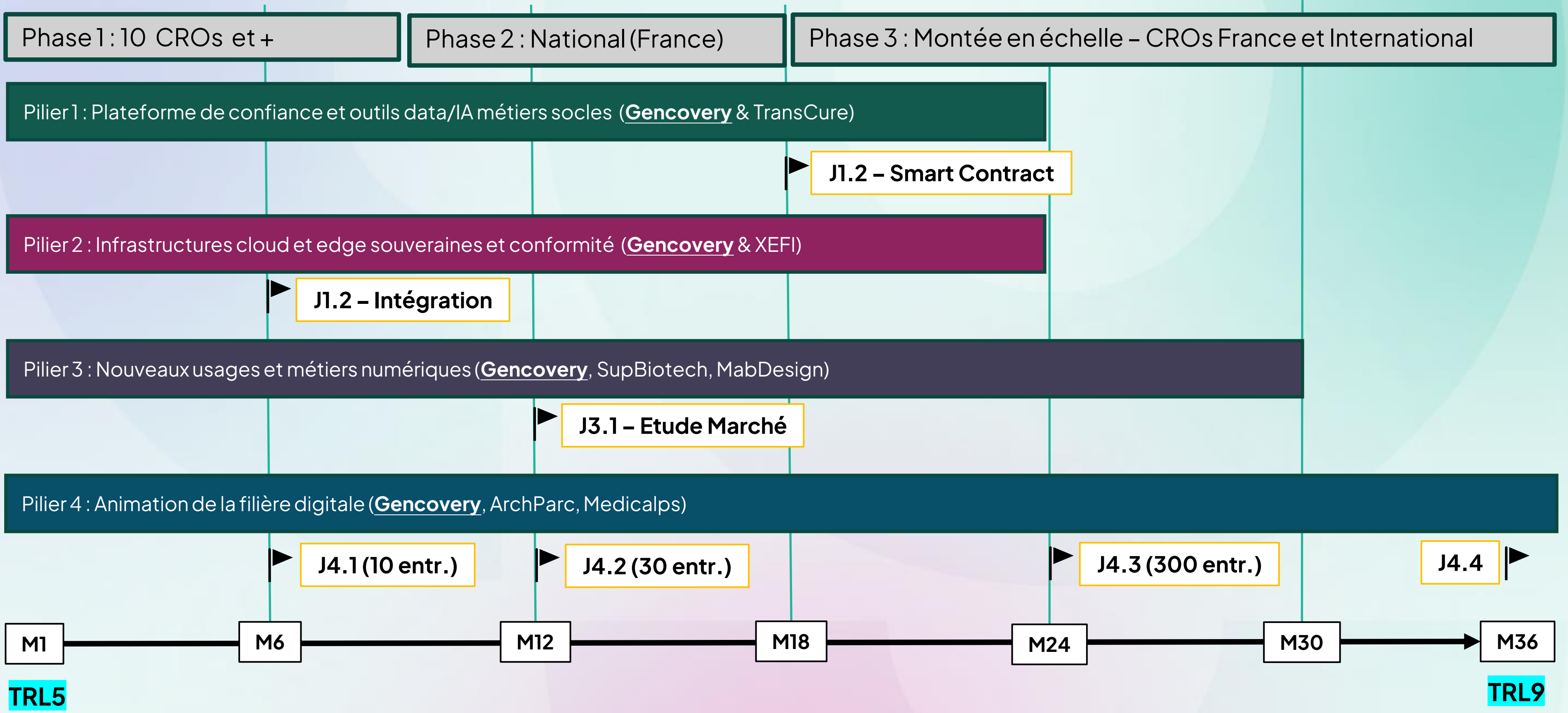
Grappe d’entreprises Biothérapies, Organisme de formation, Lyon

Gouvernance et souveraineté

Gencovery ouvre la gouvernance de la plateforme Constellab à ses partenaires et clients

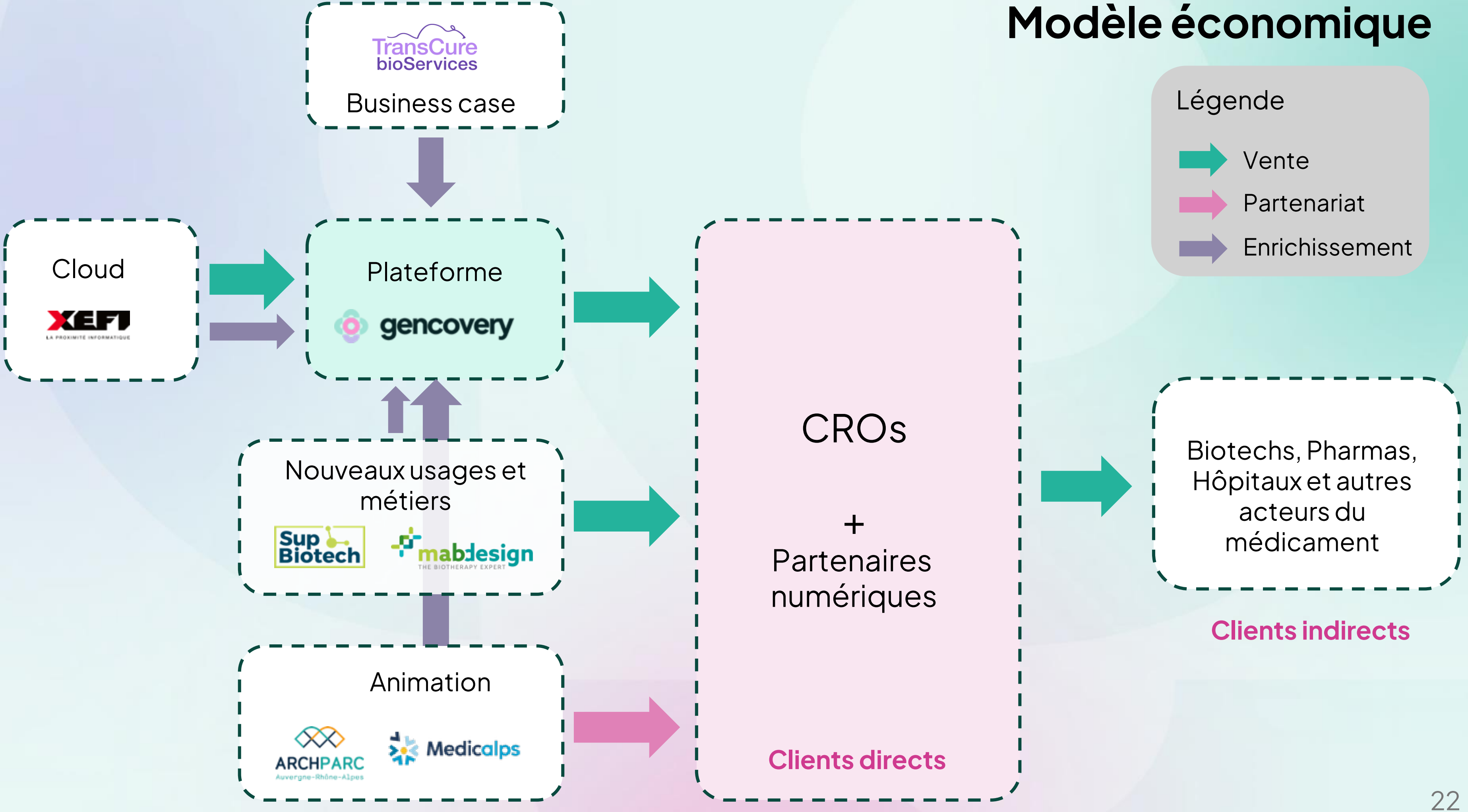
- Gouvernance **inclusive et partagée** de la plateforme
- Passage au statut **Entreprise à Mission en 2026**, inscrit dans les statuts
- Création de **deux collèges d'entreprises sociétaires** :
    - Collège des **Clients**
    - Collège des **Partenaires**
- **Ouverture du capital** pour co-construire une **plateforme numérique souveraine et mutualisée**

Calendrier



Phase 1 : 10 CROs et +
Phase 2 : National (France)
Phase 3 : Montée en échelle – CROs France et International
Pilier 1 : Plateforme de confiance et outils data/IA métiers socles (Gencovery & TransCure)
J1.2 – Smart Contract
Pilier 2 : Infrastructures cloud et edge souveraines et conformité (Gencovery & XEFI)
J1.2 – Intégration
Pilier 3 : Nouveaux usages et métiers numériques (Gencovery, SupBiotech, MabDesign)
J3.1 – Etude Marché
Pilier 4 : Animation de la filière digitale (Gencovery, ArchParc, Medicalps)
J4.1 (10 entr.)
J4.2 (30 entr.)
J4.3 (300 entr.)
J4.4
M1
M6
M12
M18
M24
M30
M36
TRL5
TRL9

Modèle économique



Budget prévisionnel

Type de dépenses	Description	Montant HT
R&D	Innovation et industrialisation	365 328
Animation	Animation, marketing, formations, étude de marché, salons	775 600
	Total	1 140 928

32%

68%

Evénements CROPulse

Animation active de la communauté sous l'angle numérique

Congrès : Convention center de ArchParc

- **1er Salon prévu les 8 et 9 Sept. 2026** -> +100 entreprises ciblées

Salons : Paris

- **Via notre réseau de partenaire** -> date à venir

Comment s'inscrire au programme ?

Inscription avant fin avril 2026

Formule CROPulse Early

- Accès au tarif privilégié pendant **2 ans**

Support CROPulse Early

- 10 jours inclus (diagnostic, accompagnement)

A partir de 7500 €/an
Année 1 et 2 puis tarif normal

Inscription entre mai et juin 2026

Formule CROPulse Late

- Accès au tarif privilégié pendant **2 an**

Support CROPulse Late

- 10 jours inclus (diagnostic, accompagnement)

A partir de 9 500 €/an
Année 1 et 2 puis tarif normal

Inscription après juin 2026

Formule classique

- Accès normal

Support classique

- Tarif normal

A partir de 11 508 €

-10% pour les membres AFSSI

https://gencovery.com/cropulse

Formulaire

S’inscrire au programme CROPulse

gencovery

www.gencovery.com

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MERCI

Positionnement

	LIMS, ELN, Labguru, Benchling, etc.	Scientist.com, Science Exchange	CROPulse
Data platform	✓		✓
Marketplace		✓	✓
Communauté			✓