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EN FRANCE  
PILIER DE L'INNOVATION



LES ENTREPRISES  
PARTENAIRES DE VOTRE R&D

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G.Screen: changing the paradigm on targets and enabling the discovery, generation and validation of conformation sensitive and pathology-sensitive drug candidates.

Les **membres AFSSI**  
ont la **parole**

WEBINAIRE



**G·CLIPS**  
B I O T E C H

Faire de la France le leader de la R&D en santé



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Co-fondatrice et Présidente de  
G.CLIPS Biotech

Toulouse/Labège.

<http://gclips-biotech.com/>

 [g.clips biotech](https://www.linkedin.com/company/g-clips-biotech)



CRO in drug discovery and preclinical non regulatory drug development.

G.CLIPS Biotech created the first enabling technology to unravel the potential of targets, drug and antibody candidates in a pathology-like format.



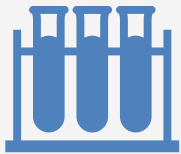
## G.CLIPS Biotech breakthrough technology in a glance



Founded in **2020**  
Headquarters in Toulouse, France



Breakthrough technology generating **new drug candidates** and bringing **added value to assets**



Unique platform combining **target production, target validation** and **drug candidate** profiling



**Small molecule, biologics and cell therapy programmes supported** at all development stages



**Enabling technology** for discovery, selection, characterization and validation of **more efficient and more selective drugs**

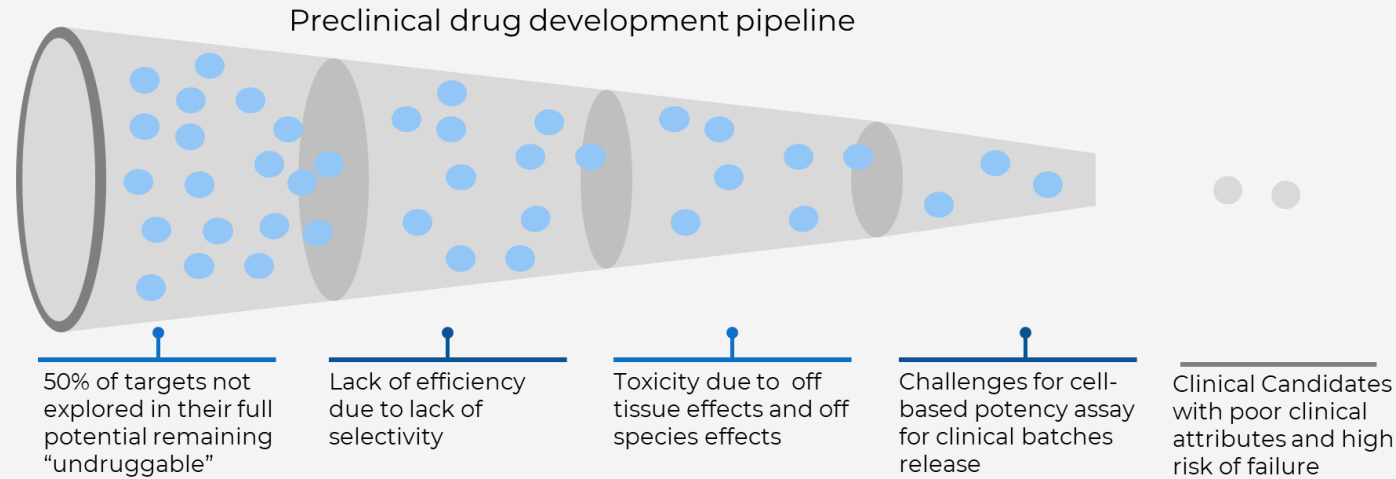


Unique evolutive platform validated by **30+ clients** projects successfully managed



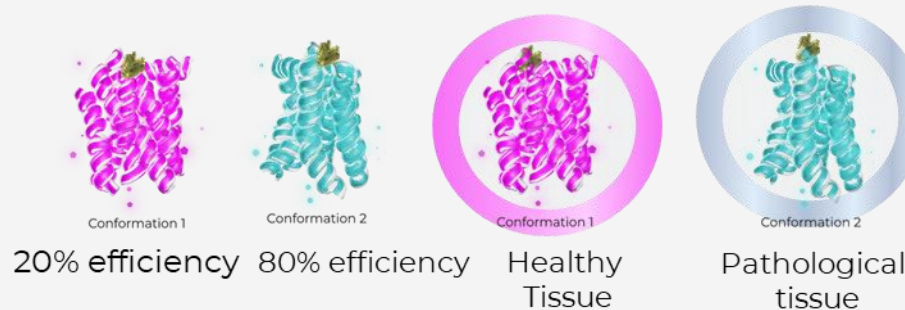
# G.CLIPS Biotech breakthrough technology in a glance

## Problems



*Lack of access to difficult targets*

No new Drug candidates



*Lack of selectivity*

Drug candidate failure



*Lack of functional assays*

No innovative mechanism of action (MOA)

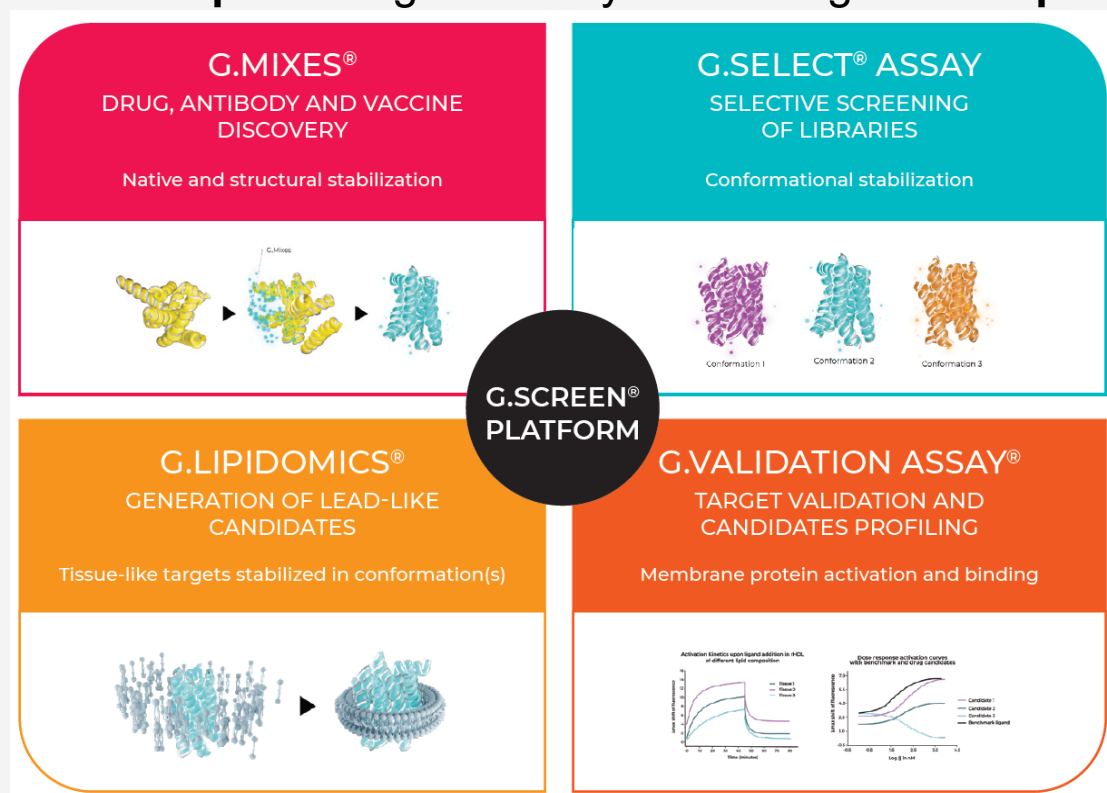


# G.CLIPS Biotech breakthrough technology in a glance

## Solutions: The G.Screen Platform

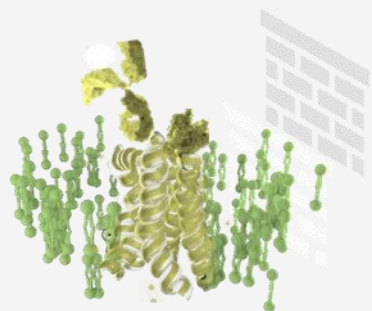
A proprietary technology to resolve all the problems in an integrated, innovative, unique platform.

From the **first steps** of drug discovery and through **all the pre-clinical steps**.





## Solutions



Stabilization of difficult targets

New drug candidates

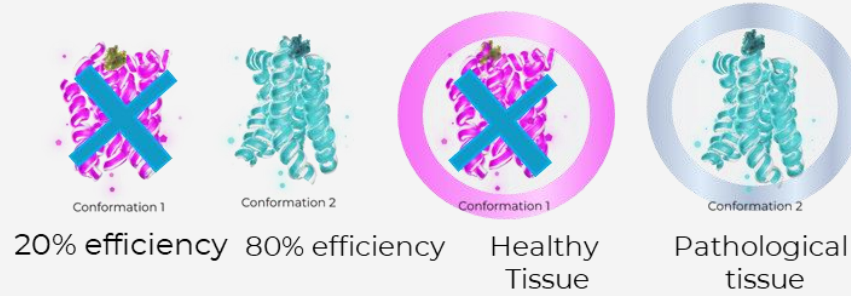
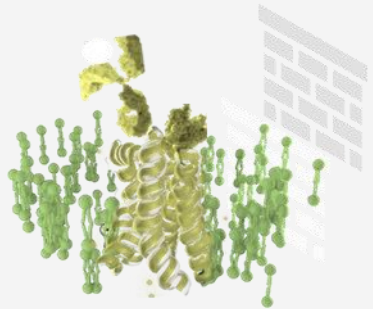
**G.MIXES®**  
DRUG, ANTIBODY AND VACCINE  
DISCOVERY

Native and structural stabilization

G.S.C.



## Solutions



Stabilization of difficult targets

Stabilization of the target in pathology like conformation and environment

New drug candidates

Increased selectivity, decreased toxicity

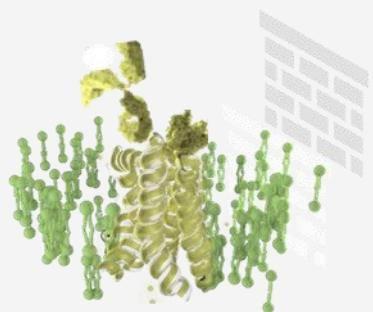
**G.MIXES®**  
DRUG, ANTIBODY AND VACCINE DISCOVERY  
Native and structural stabilization

**G.SELECT® ASSAY**  
SELECTIVE SCREENING OF LIBRARIES  
Conformational stabilization

**G.LIPIDOMICS®**  
GENERATION OF LEAD-LIKE CANDIDATES  
Tissue-like targets stabilized in conformation(s)



## Solutions



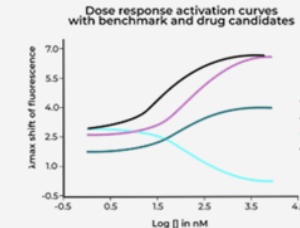
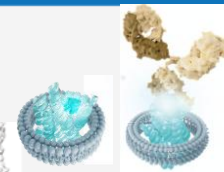
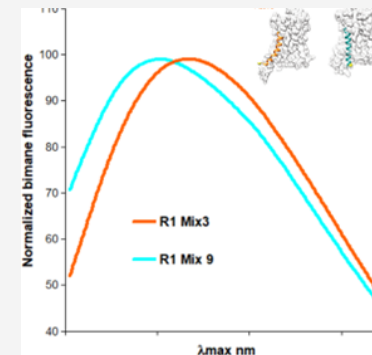
Stabilization of difficult targets

New drug candidates



Stabilization of the target in pathology like conformation and environment

Increased selectivity, decreased toxicity



Functional, proprietary, cell free assay

MOA and candidates' pharmacology unraveled

**G.MIXES®**  
DRUG, ANTIBODY AND VACCINE DISCOVERY  
Native and structural stabilization

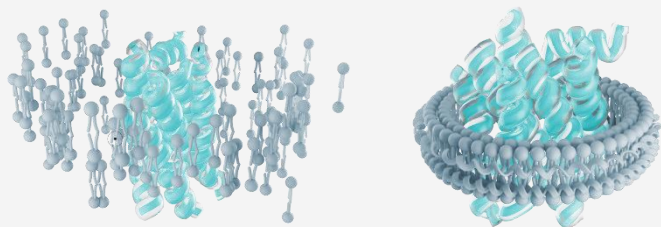
**G.SELECT® ASSAY**  
SELECTIVE SCREENING OF LIBRARIES  
Conformational stabilization

**G.LIPIDOMICS®**  
GENERATION OF LEAD-LIKE CANDIDATES  
Tissue-like targets stabilized in conformation(s)

**G.VALIDATION ASSAY®**  
TARGET VALIDATION AND CANDIDATES PROFILING  
Membrane protein activation and binding

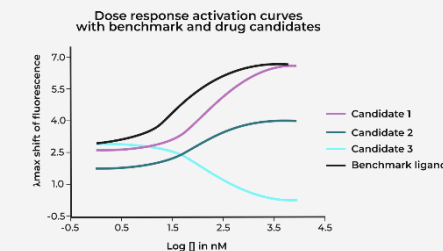
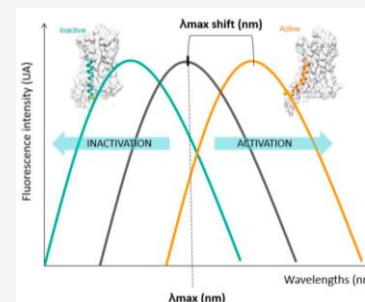
## We provide:

High quality tools for a successful pre-clinical development and de-risked clinical steps.



### Targets, purified and stabilized

- membrane and soluble proteins,
- In their pathology like format (full length, oligomerization state, conformation and environment)
- To be used for:
  - antigens for immunizations,
  - selections,
  - Screenings,
  - structural and biophysical characterization,
  - functional assays.



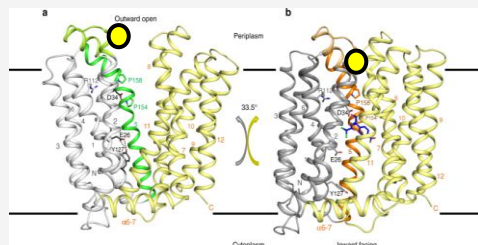
### Functional assays (G.Validation assay) for:

- screening and
- Pharmacological profiling of candidates,
- target validation,
- target engagement,
- Cross species interactions.
- Potency and batch release assay



## G.CLIPS Biotech vs competitors: Target Validation, G. Validation

**Not only binding, but also structural change due to ligand binding**



Open vs closed conformation detection



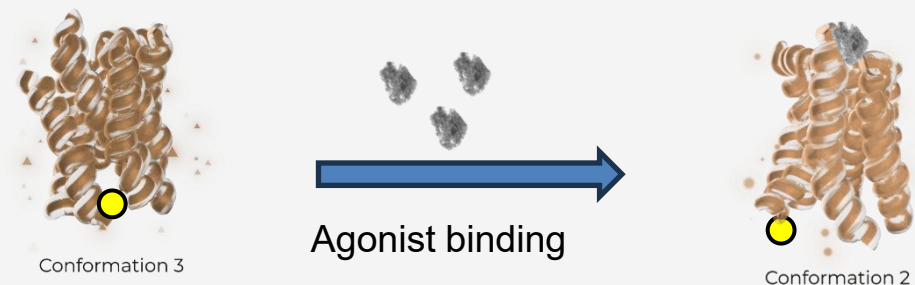
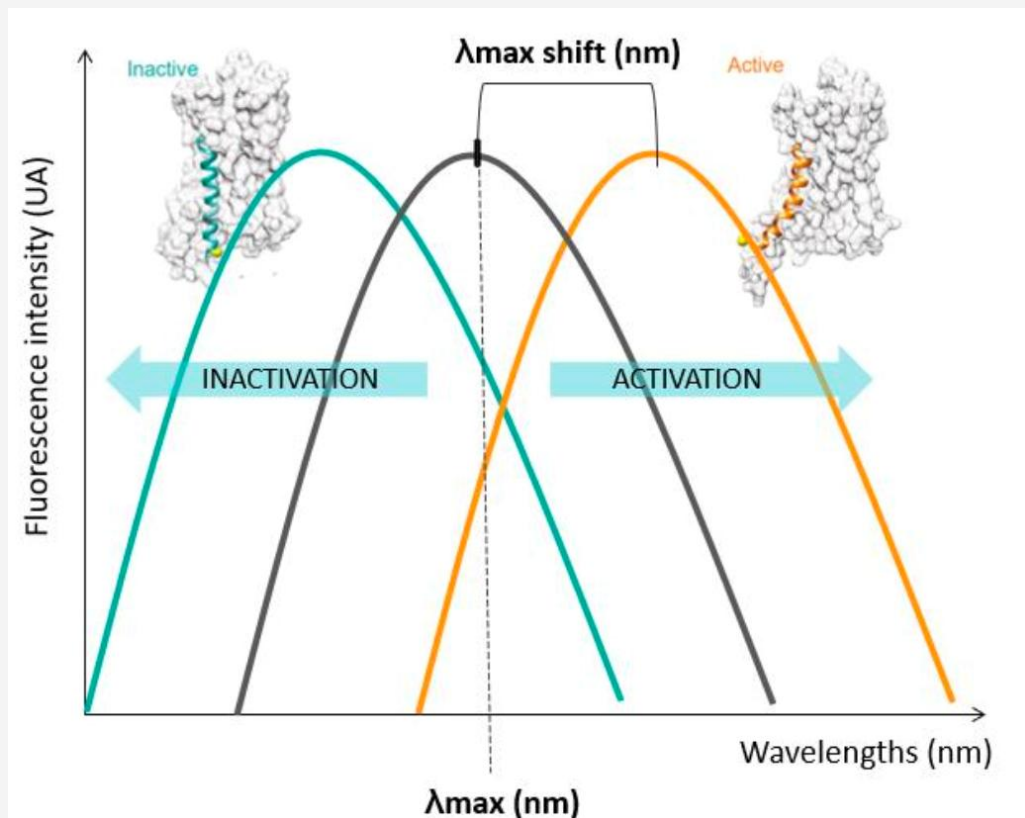
Dimerization detection



Active vs inactive state detection

## G.CLIPS Biotech vs competitors: Target Validation, G. Validation

**Not only binding, but also structural change due to ligand binding**



Active vs inactive state detection

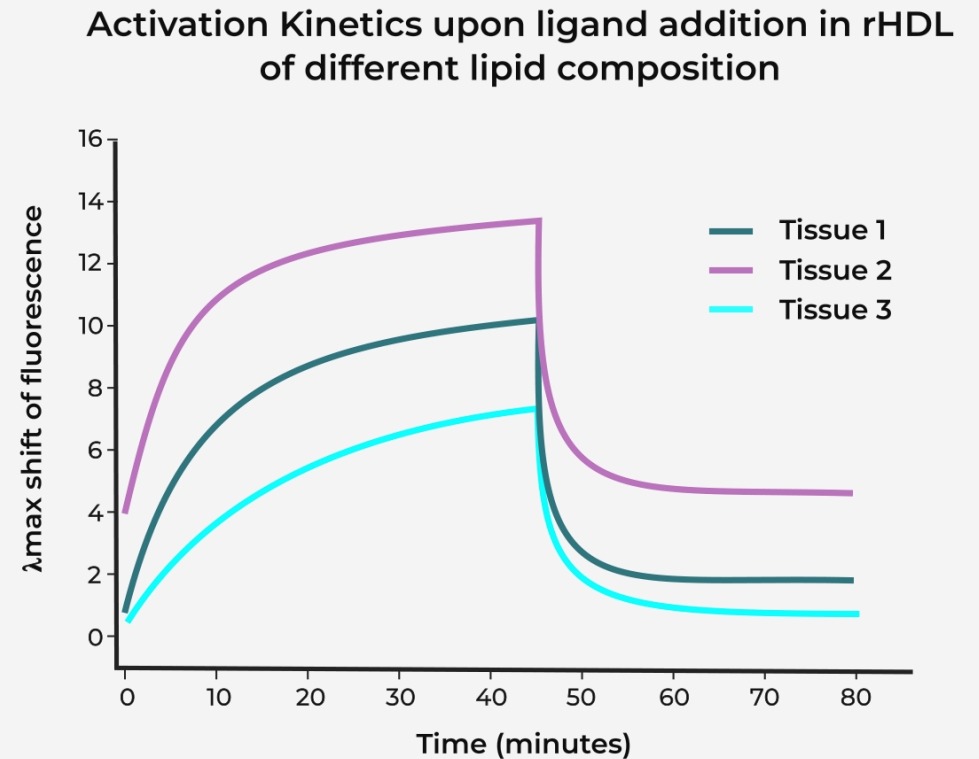
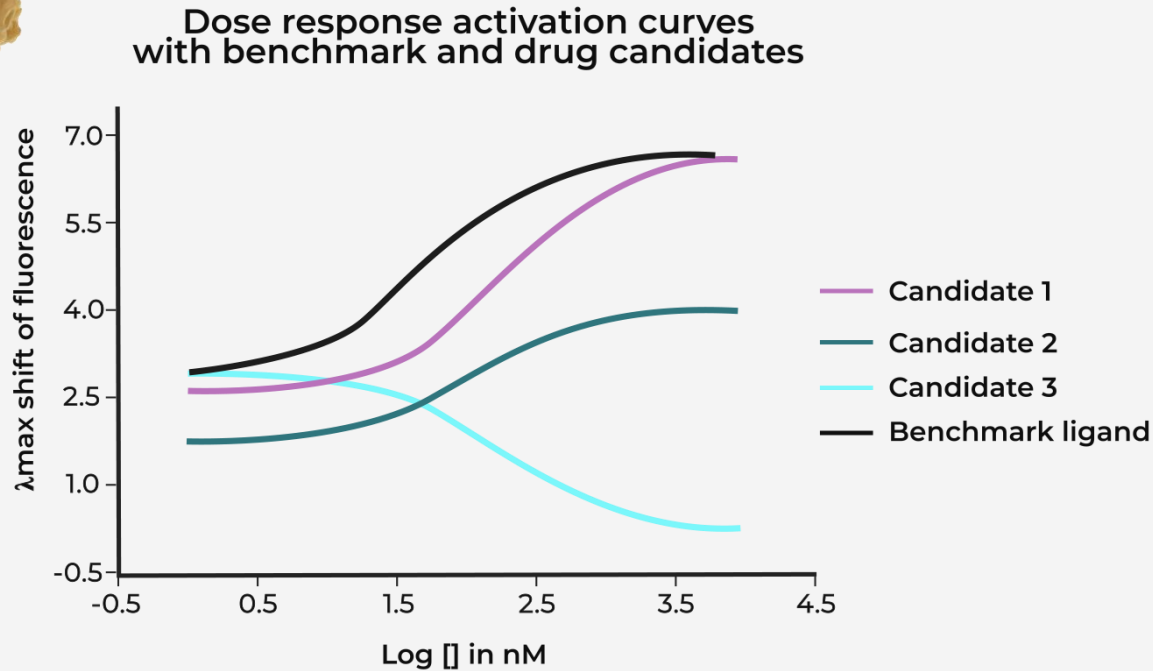
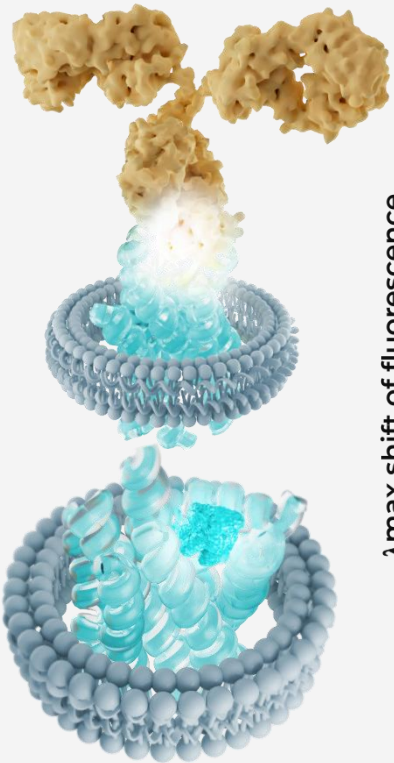
- Proprietary cell free fluorescence-based assay.
- Validate target function with benchmarks
- Evaluate the conformational change of the target upon activation/inactivation
- Pharmacological profiling of reference and candidate ligands.

G.Validation® assay is used as well at each step of the process and gives valuable insights and information to select and validate the best candidates from hits to clinical candidates.



## G.Validation Assay®

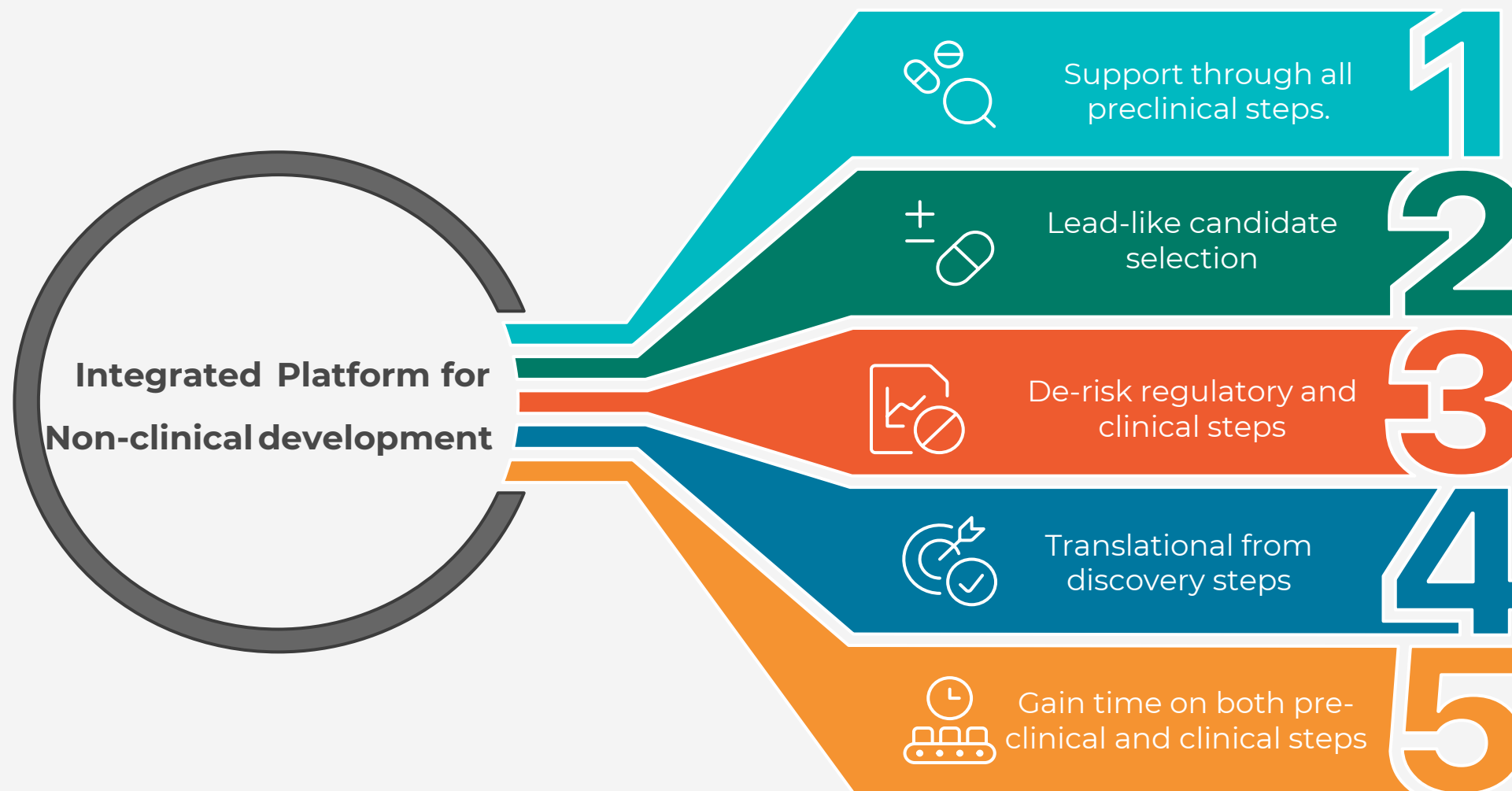
### In vitro functional assay for target validation, and candidate pharmacology



**Gain : Candidates dose responses, activation/inactivation Kinetics, Kd and Bmax measurements**



## G.Screen platform: 4 Proprietary assets making G.CLIPS technology unique with high added value





## Why G.CLIPS Biotech ?



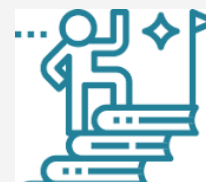
**Drug** the undruggable



Understand the **mechanism of action** of your drug candidates for **discovery and optimization** of your asset



**Validate potency** and **secure toxicity** studies of your clinical assets on a **cell free** assay



Demonstrate **key differentiation** of your pipeline



Create **new IP** around your candidate and your science



**Increase the value** of your assets and **de-risk your programs** by generating **key data on your target**

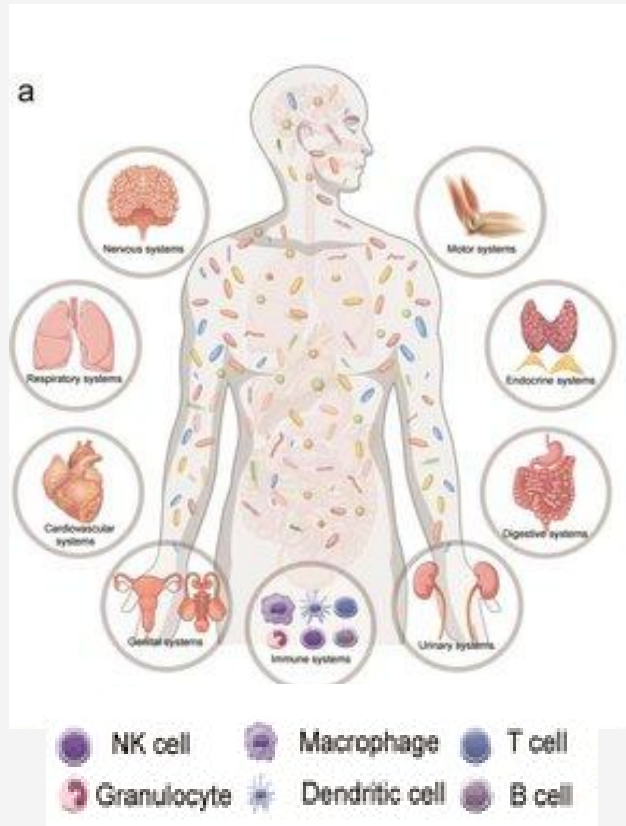


- Merci pour votre écoute
- Any questions???



## G.CLIPS technology in a customer journey: autoimmune and inflammatory disorders

Target in many organs including immune cells

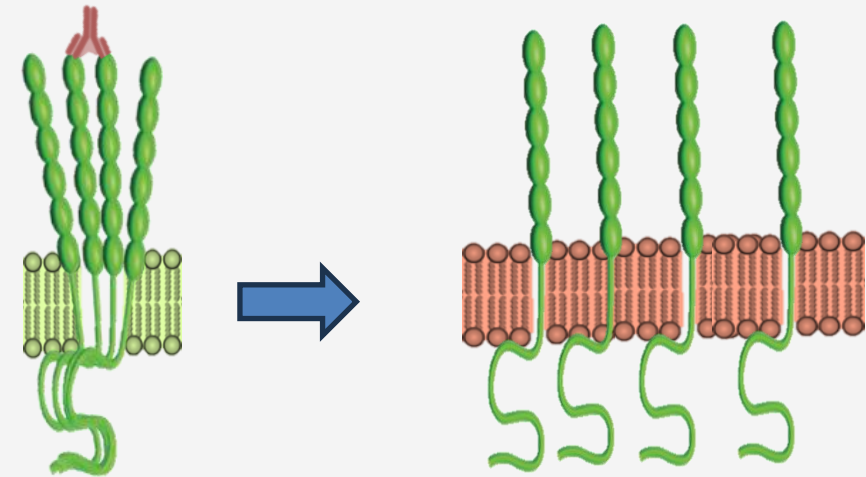
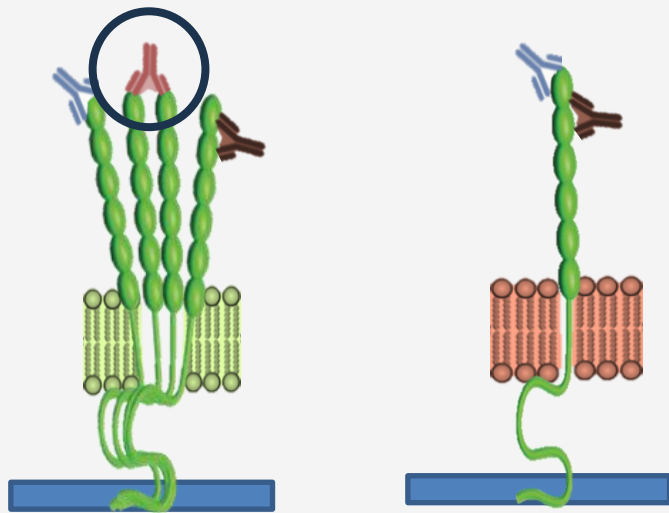


Target in healthy cells

Target in disease

**The target format vary in different tissues and in healthy vs disease cells**

## G.CLIPS technology in a customer journey: G.CLIPS Mission



Disease

Health

**Select for a drug candidate acting on the target only in the immune cells, in disease....**

**...and able to disrupt the cluster**



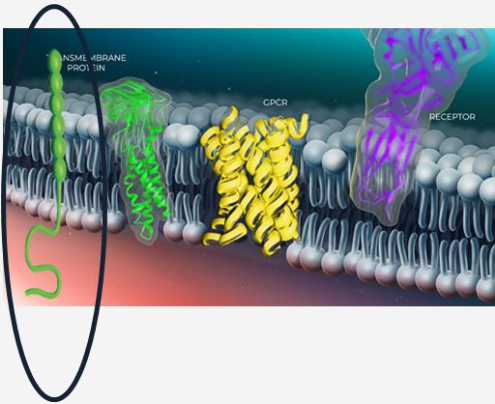
## G.Screen assets for value creation.

**Target  
expression in  
cells**

**Target extraction  
and stabilization  
in monomers or  
clusters**

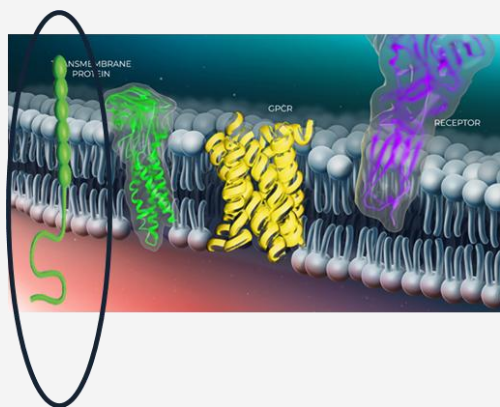
**Target Monomers  
or cluster  
embedding in a  
pathology-like  
lipidic  
environment**

**Selection of  
antibodies able  
to recognize  
monomers  
clusters or both**

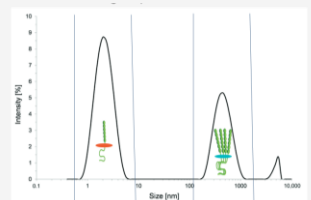




## G.Screen assets for value creation: G.Mixes and G.select assay



**G.Mixes**



Monomer: G.CLIPS stabilization mix for monomers  
Cluster: G.CLIPS stabilization mix for cluster

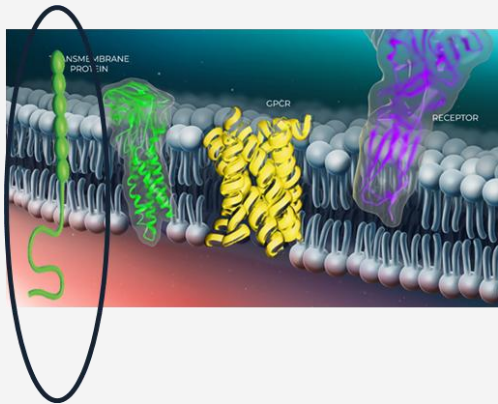
**G.Select**



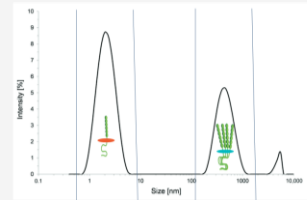
Target in desired formats



## G.Screen assets for value creation: G.lipidomics

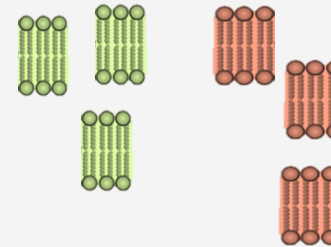


**G.Mixes**

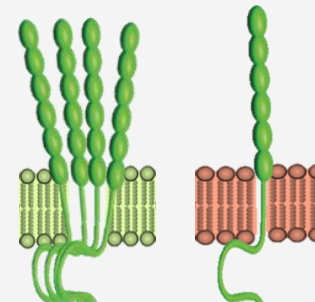
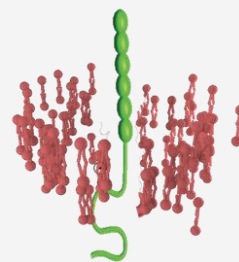


Monomer: G.CLIPS stabilization mix for monomers  
Cluster: G.CLIPS stabilization mix for cluster

**G.Select**



**G.Lipidomics**



Target in desired formats and environments



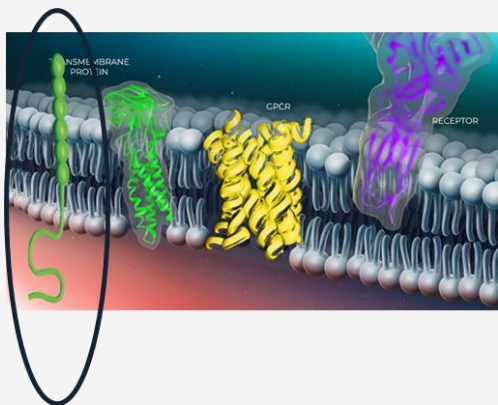
## G.Screen assets for value creation: Candidate selection

Target expression in cells

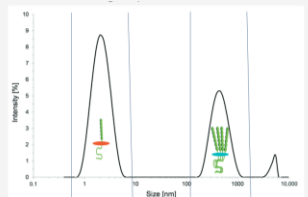
Target extraction and stabilization in monomers or clusters

Target Monomers or cluster embedding in a pathology-like lipidic environment

Selection of antibodies able to recognize monomers clusters or both

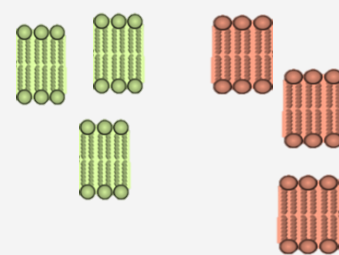


**G.Mixes**

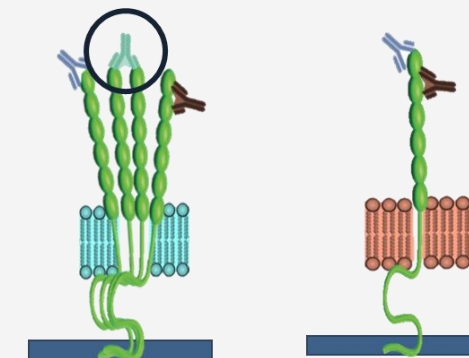
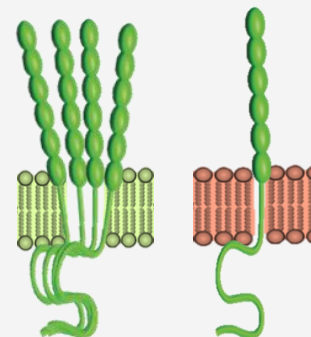
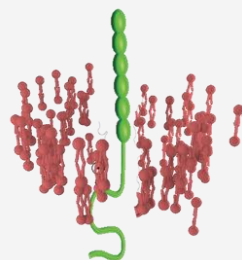
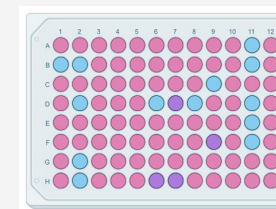


Monomer G-CLIPS stabilization mix for monomers  
Cluster G-CLIPS stabilization mix for cluster

**G.Select**

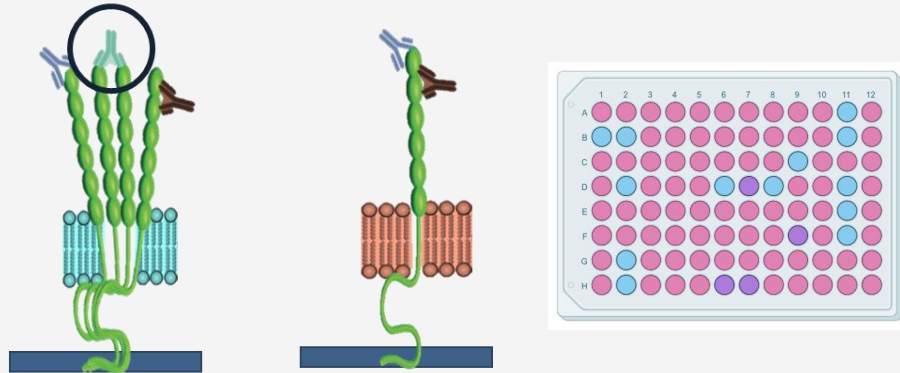


**G.Lipidomics**

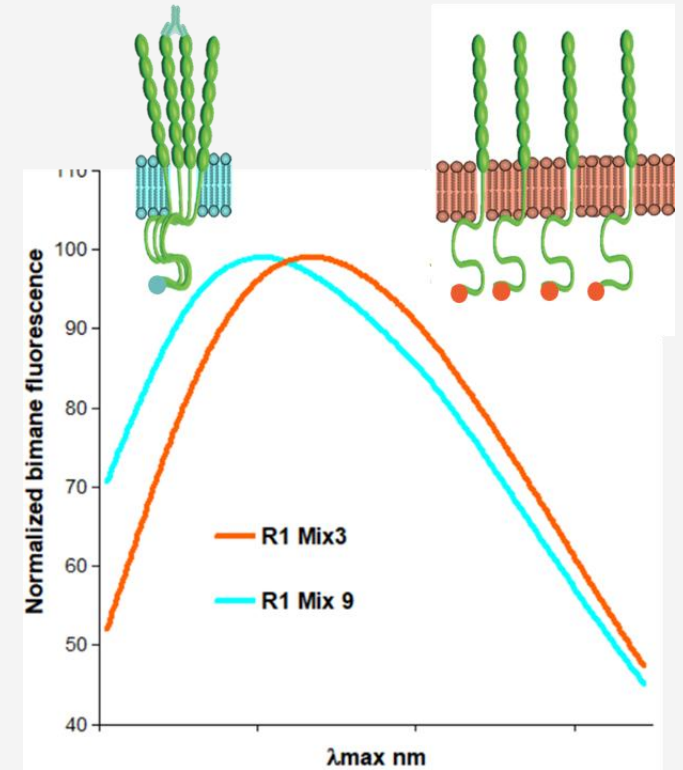
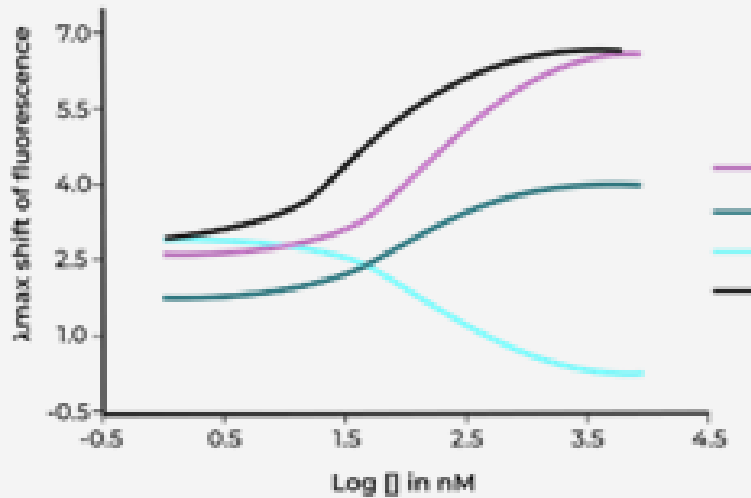


**Derisked candidate**

## G.Screen assets for value creation: G.Validation assay



Dose response activation curves with benchmark and drug candidates



- Mechanism of action
- potency assay



## G.Screen assets for value creation: G.Validation assay

**Discovery of a new lead candidate based on translational sciences and with validated MOA**

**Cross-species interaction with :**

- Mouse
- Rat
- Monkey protein

**Off tissue/ pathology de-risk:**

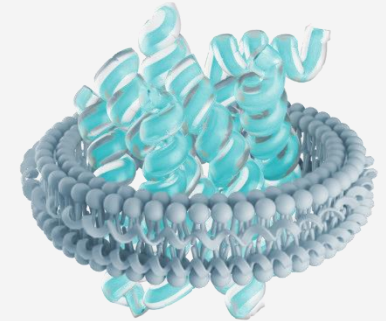
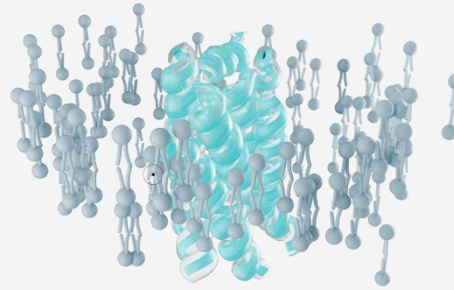
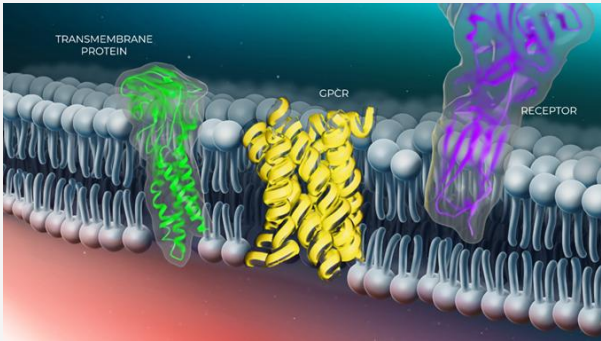
- Reconstitution in different environments
- Test lead candidate activity

**G.Validation assay for cluster disruption to be used as batch release  
Potency assay**



## G.CLIPS Biotech vs competitors

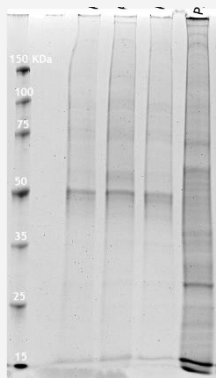
Classical affordable for some our competitors



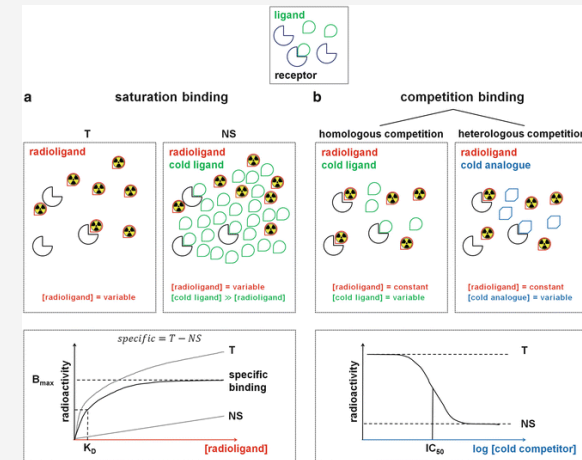
nsect/ yeast/ E.coli/ Synthetic

Micelles/liposomes

Nanodiscs simple phospholipid bilayer



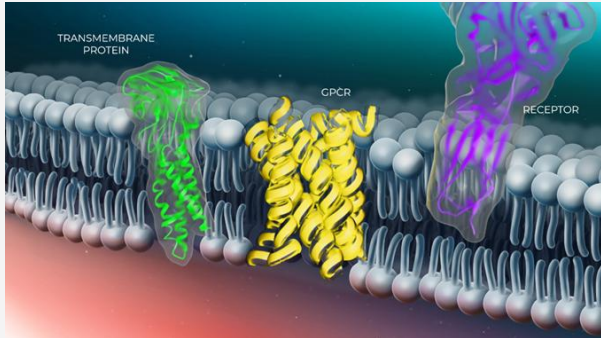
SDS-Page



Radioligand **binding** assay

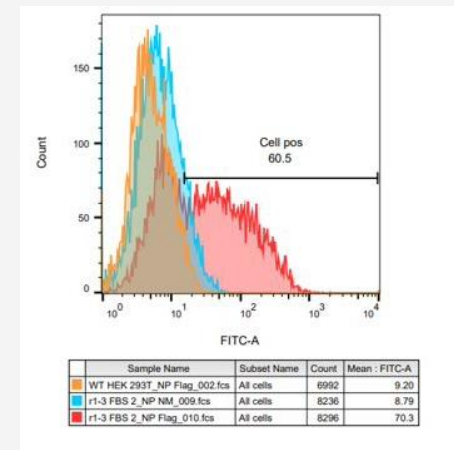
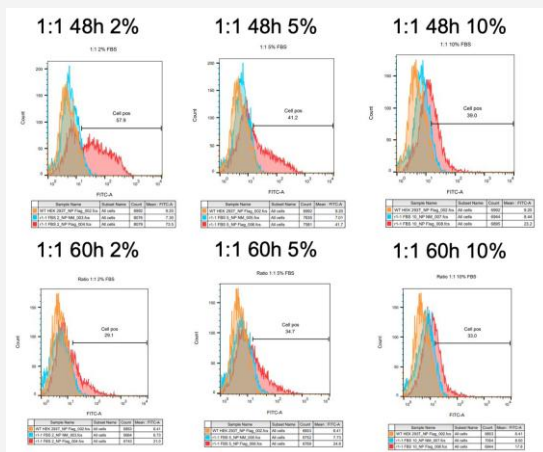


## G.CLIPS Biotech vs competitors: Target expression

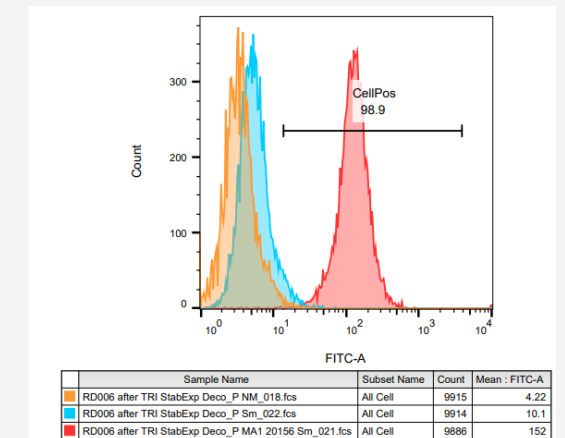


- Optimized vectors for cell surface expression
- WT protein no modification except for tags for detection and purification
- Mammalian cells expression for Post translational modification and structural/format conservation
- Transient expression and stable cell line establishment.

### Expression conditions optimization



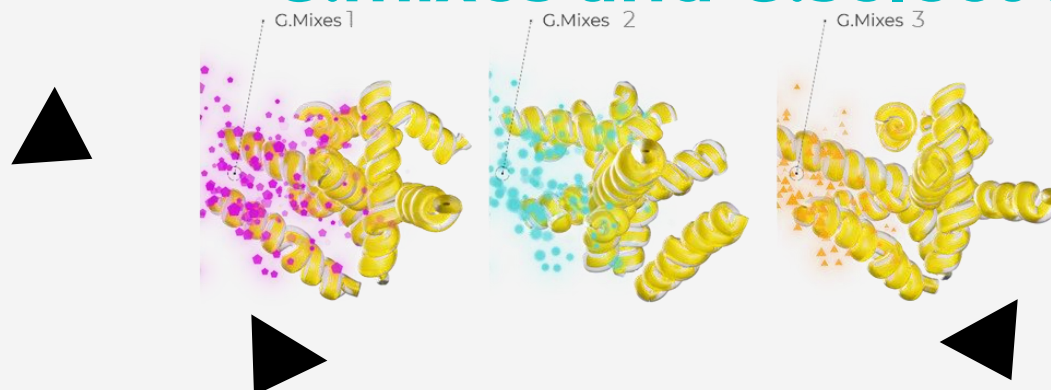
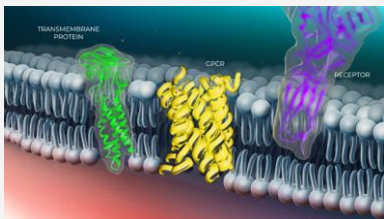
Transient expression



Stable cell line



## G.CLIPS Biotech vs competitors: Target stabilization and purification G.mixes and G.select assay



**- G.mixes allow stabilization of specific conformation and/or formats.**



Conformation 1



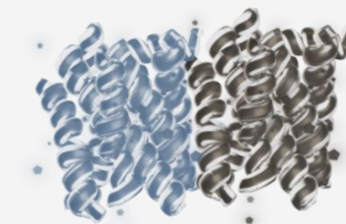
Conformation 2



Conformation 3



Monomers



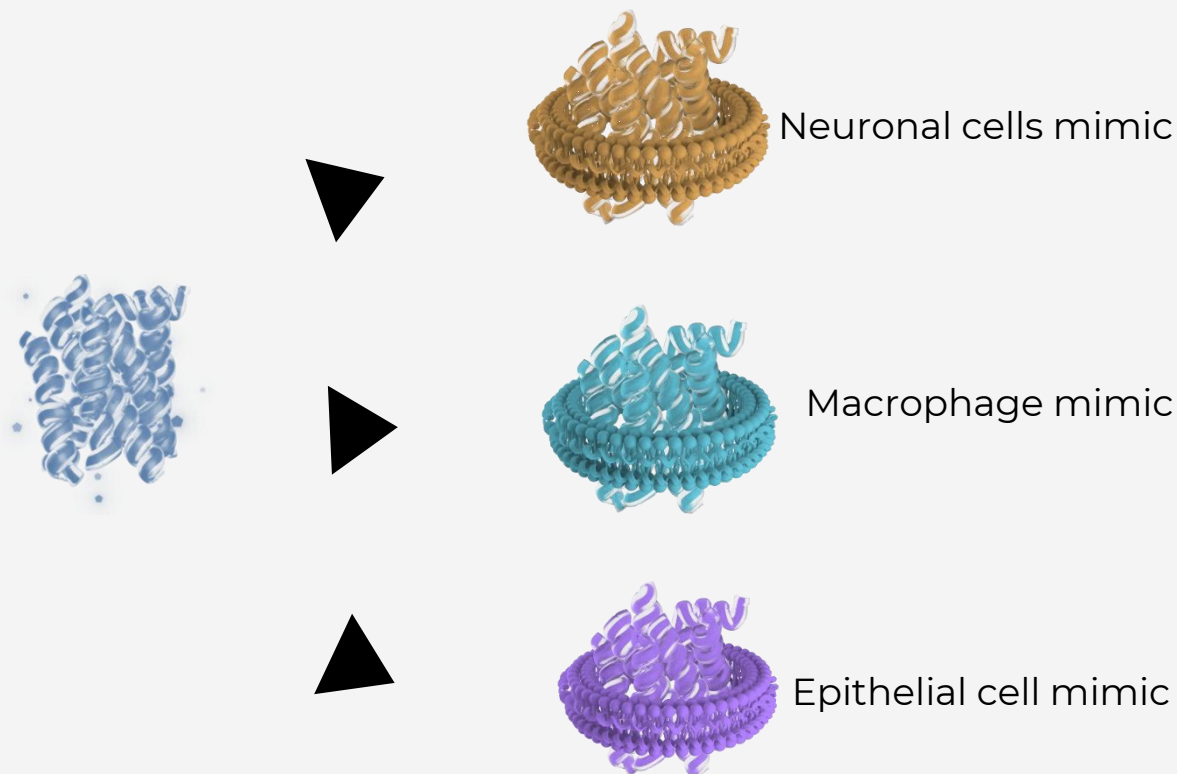
oligomers

Perform selective screening  
Generate different stabilized conformational states for the same target  
Generate leads specific to one or several conformational states

**Gain : Increase yield, efficacy and selectivity of your hits and leads candidates**



## G.CLIPS Biotech vs competitors: Target reconstitution, G.Lipidomics



**- G.Lipidomics allow target reconstitution in lipidic bilayer representing specific cells types/ tissues.**

G.Lipidomics®, is a proprietary database of the lipid composition of the membranes of more than 20 tissues and cell types, allowing the reconstitution of a membrane protein in an environment mimicking the target tissue/cells in the specific pathophysiology.

**Gain : Purified target expressed in the desired conformation and in a tissue like environment**

