Clexio Biosciences

Introducing
OLAR® Platform

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A clinical stage company redesigning therapies for **neurological** and **psychiatric** conditions

Deep expertise and broad experience in Pharma, from early innovation to late stage development

2018
Spin-Off

40
Team members

15
PHDs

5
MDs

\+

End-to-end R&D capabilities

- Chemistry
- Technology
- Preclinical
- Clinical Pharmacology
- Clinical Development
- Regulatory Affairs
- Innovation lab
- IP

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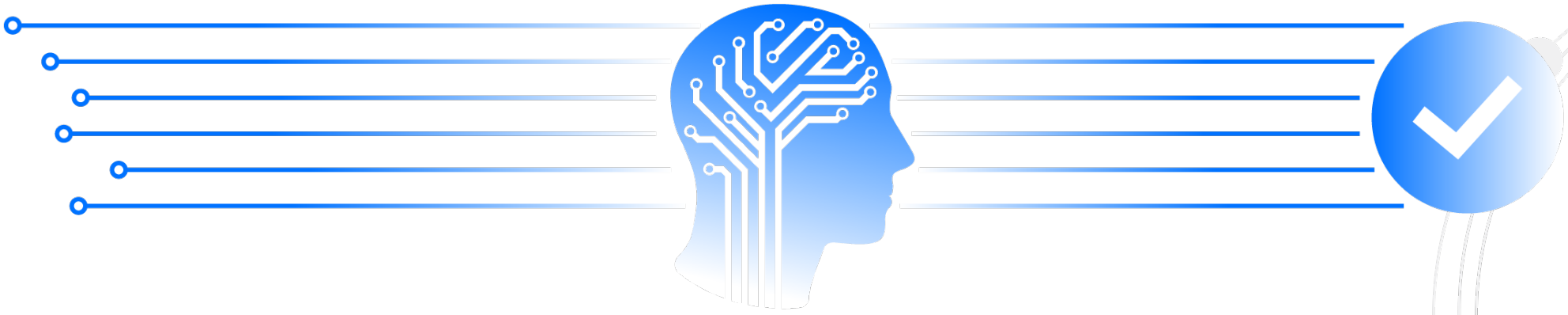
Broad industry network

Clexio at a glance



Multi-asset pipeline

- ✓ Lead asset in Phase 2
- ✓ Additional 3 assets in Ph1
- ✓ Preclinical pipeline

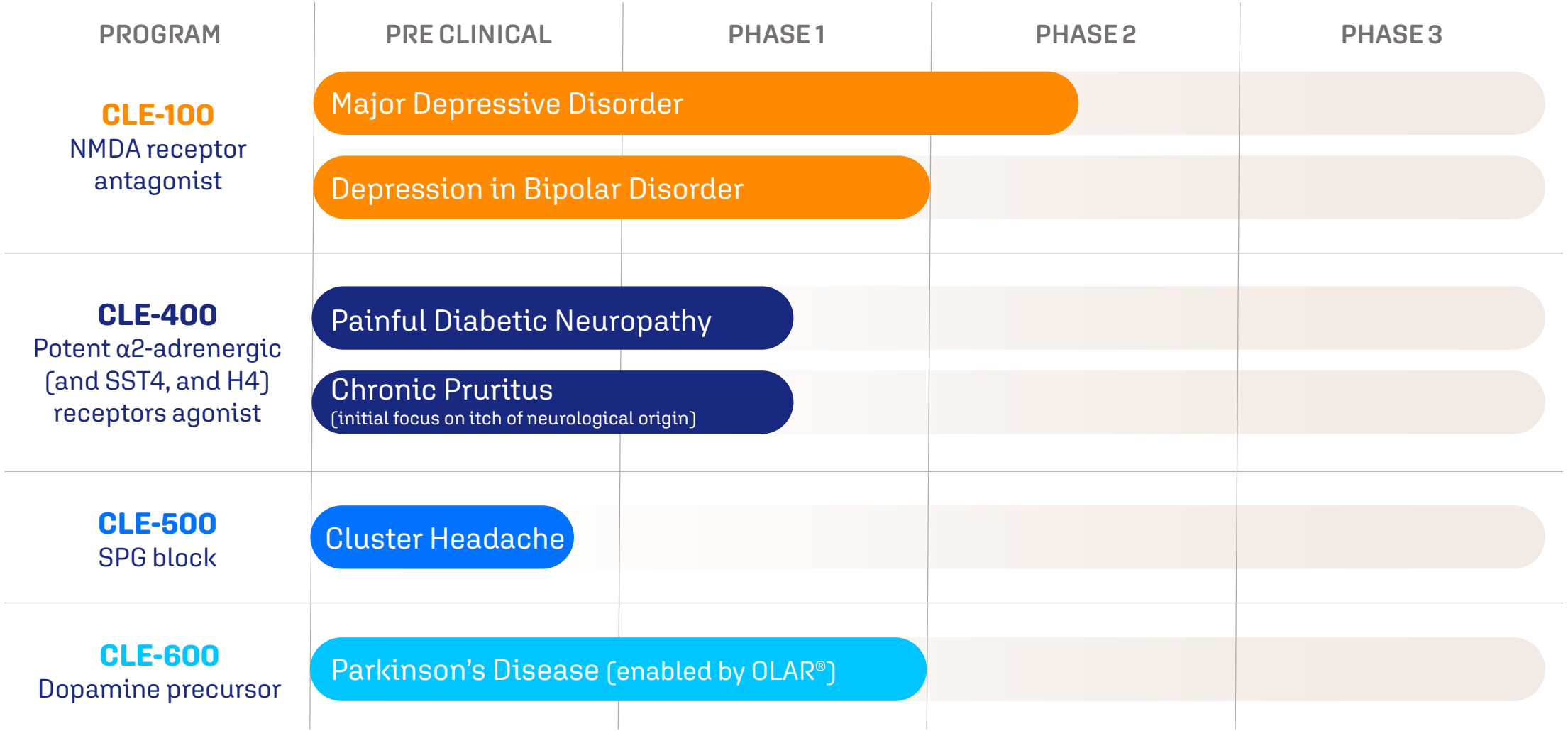
Focus on Psychiatry and Neurology

- ✓ Targeting significant and growing markets

Technological and therapeutic innovation

- ✓ 27 patent families, 12 granted in US
- ✓ Proprietary technologies
- ✓ Internal pipeline creation capabilities

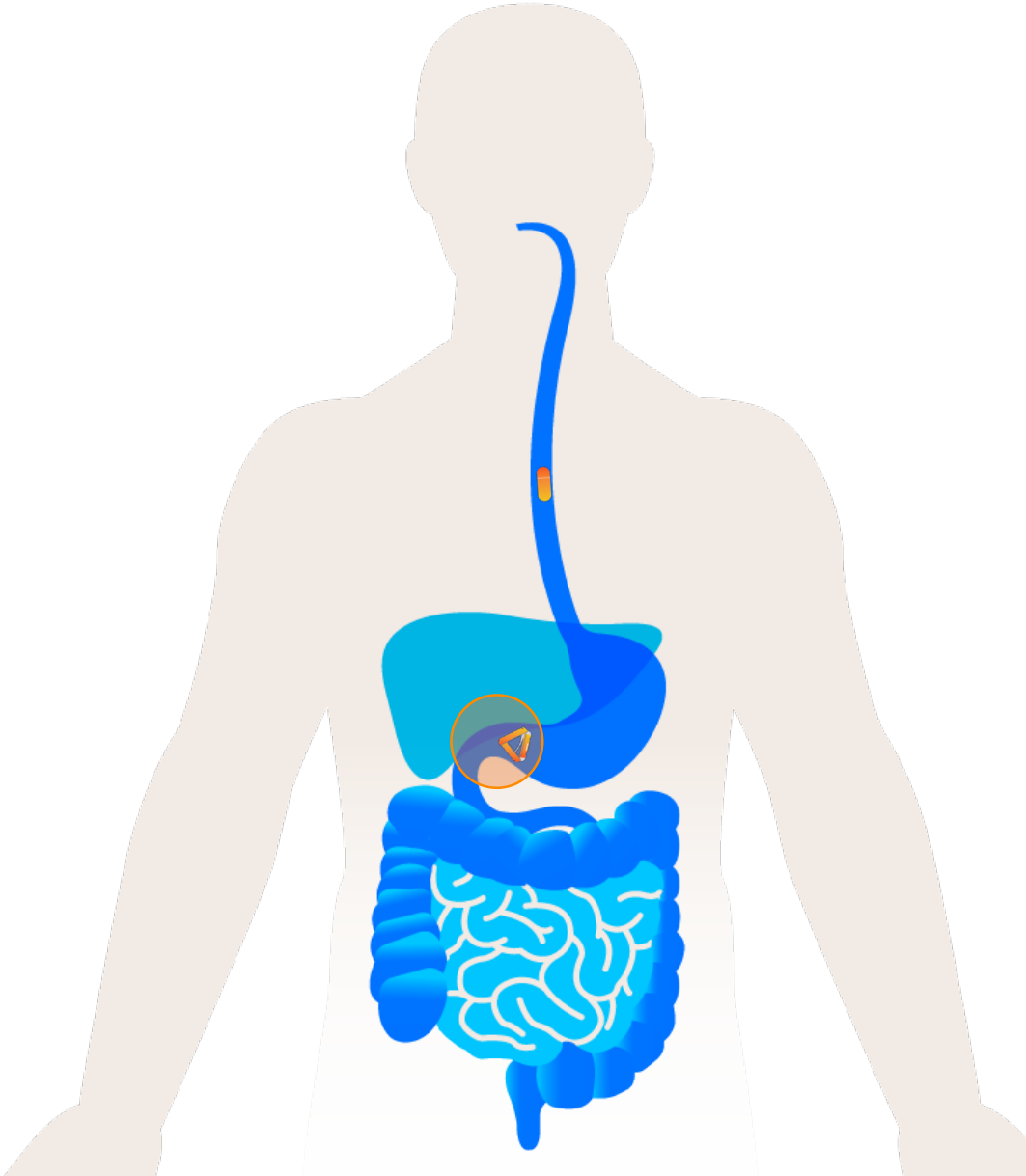
Clexio's pipeline – current status



Clexio's Oral Long Acting Release (OLAR®) technology

OLAR® is a novel platform designed for continuous drug delivery to the GI tract.

- Orally administered, **non-invasive.**
- Targeting more efficient drug absorption and lower drug plasma fluctuations. Continuous drug release for **8 – 24 hours, under fast and fed conditions.**
- **Versatile platform**, suitable for multiple APIs and enabling high drug loading.
- **Broad IP** position with protection through **2037.**
  First US patents issued.
- **Valuable for new drugs or for Life Cycle Management**



Clexio

OLAR® mechanism

Folded configuration
Enables swallowing

A platform designed to be swallowed in a folded configuration, in a capsule.

Unfolded configuration
Controls gastric retention

After swallowing, platform unfolds to a triangle, with a size bigger than average pylorus. It is then retained in the stomach while releasing inner formulation (multiple tablets).

Disassembled configuration
Allowing gastric exit

After formulation dissolution/ erosion, the platform disassembles to parts smaller than the pyloric size, thus emptied from the stomach and soften/degrade in intestine.

OLAR® – why, when and how?

Why?

- Continuous drug delivery to the GI tract by gastric retention
- Maximizes drug absorption
- Reduces drug plasma fluctuations

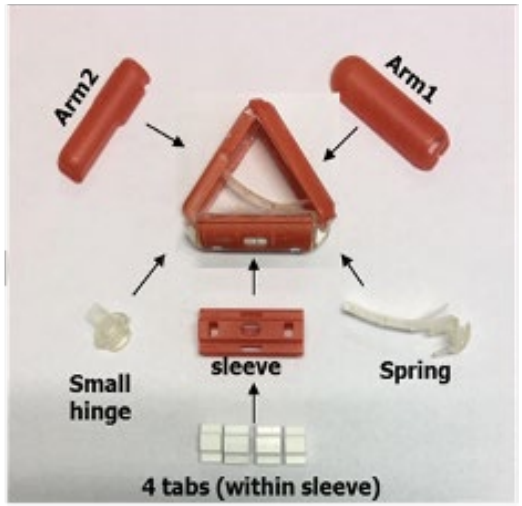
When?

- When traditional Extended Release formulations don't provide the required PK profile
- To be used with drugs which have narrow absorption window or act locally in the stomach or in the upper GI tract
- When there is a need to reduce total dose while maintaining efficacy
- When Reducing Cmax has the potential to improve side effects

How?

- Gastric Retention properties independent of food intake
- Timer mechanism (based on formulation and dissolution parameters) for exit from stomach
- Drug formulation is independent of the OLAR®
- Versatile platform, suitable for multiple drugs and drug combinations
- Enables high drug loading - up to 750mg total weight
- Safe passage through GI

OLAR® innovative pillars



Timer disassembly
based on inner tablet dissolution

Size
swallowable, but not passing pylorus

Strength
withstands gastric forces

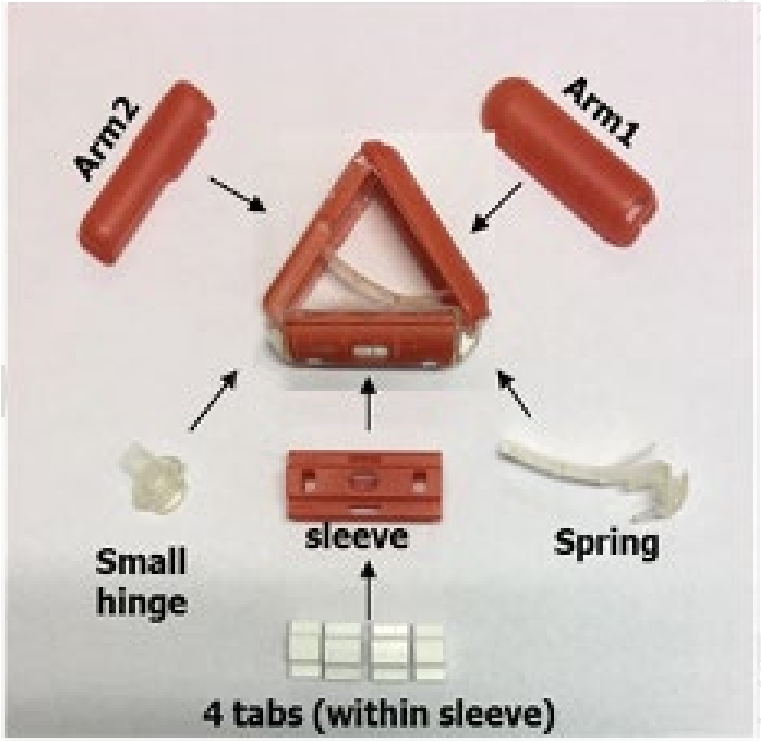
Made only of pharmaceutical excipients

OLAR® allows for continuous drug release to the upper GI

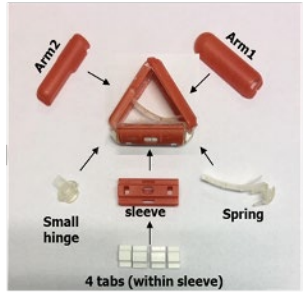
Extended profile achieved by slow dissolution in the sleeve (through the holes)

+

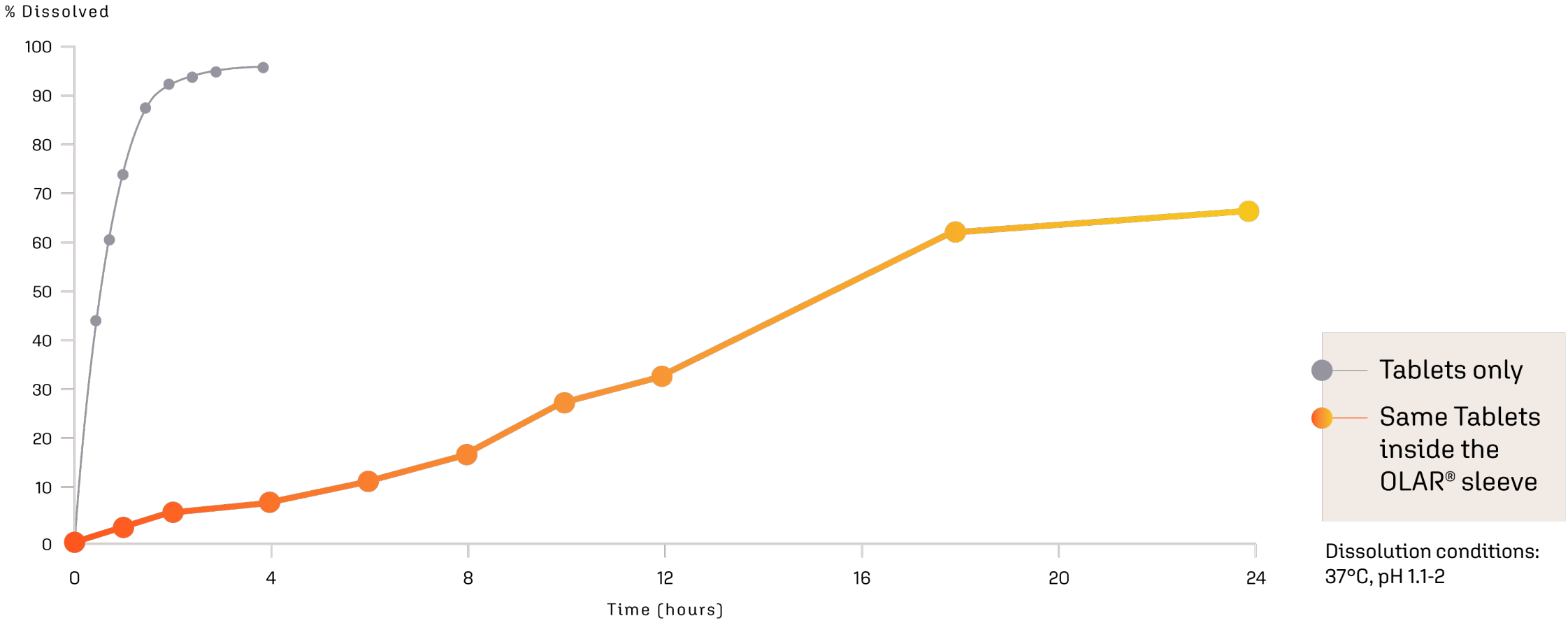
Gastric Retention is achieved by the triangle shape



In-Vitro: Extended Release profile achieved by slow dissolution of the inner tablets in the OLAR®



Once placed in the OLAR®, **the Immediate Release tablets provide an Extended Release profile**

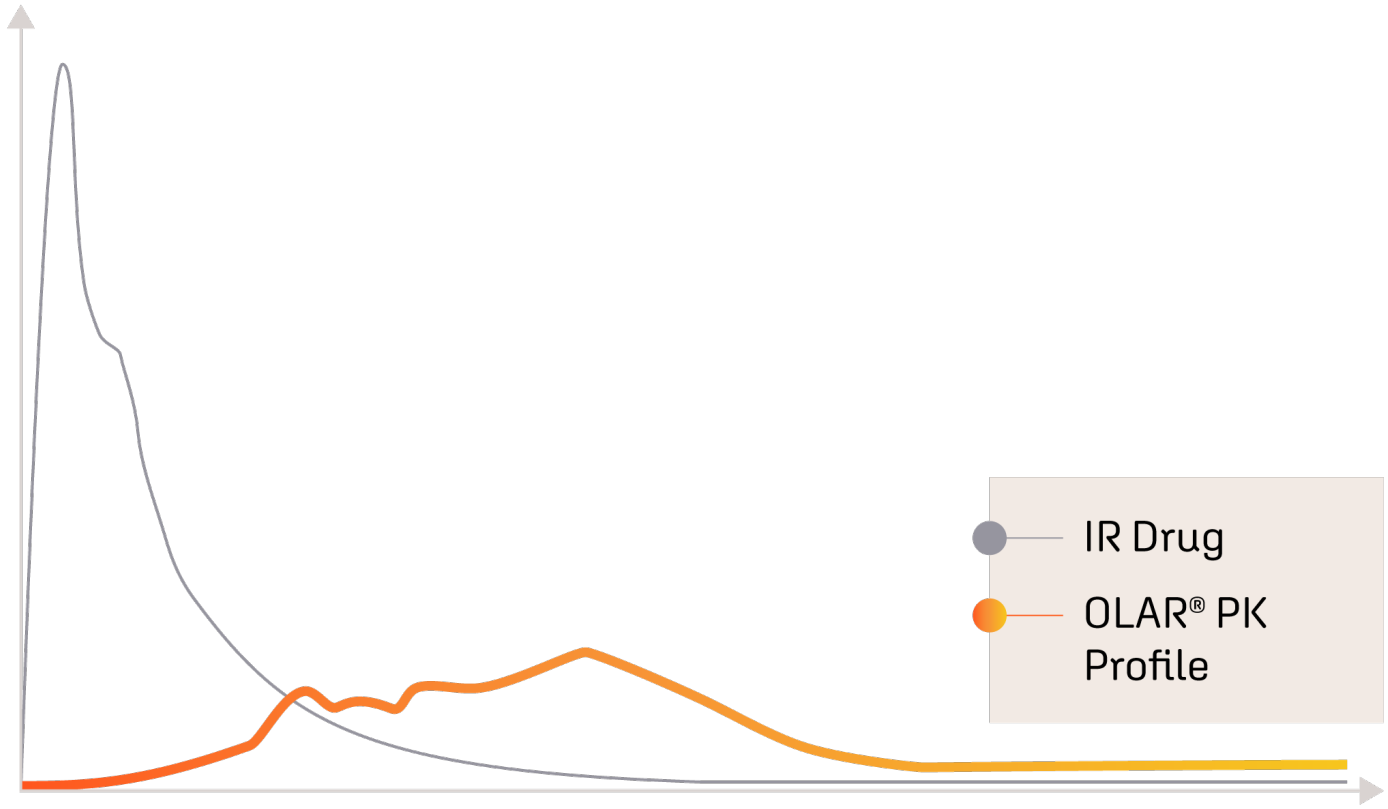


Dissolution conditions:
37°C, pH 1.1-2

OLAR® modifies PK profile

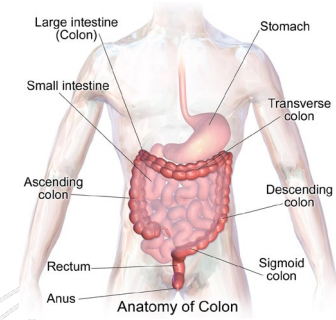
Clexio performed a Ph1 in 18 healthy volunteers

- Extended PK profile was demonstrated vs. IR drug
- Significant Cmax reduction (75%) while keeping similar AUC
- Significant Tmax extension
- Good correlation between PK profile and gastric retention

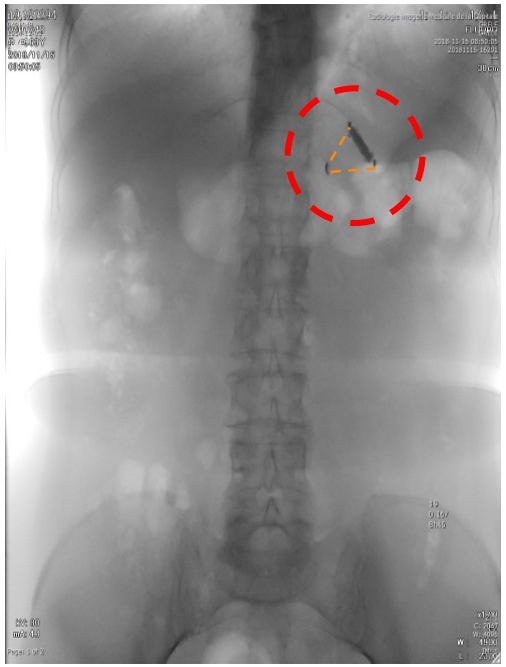


* Illustration only, not actual data

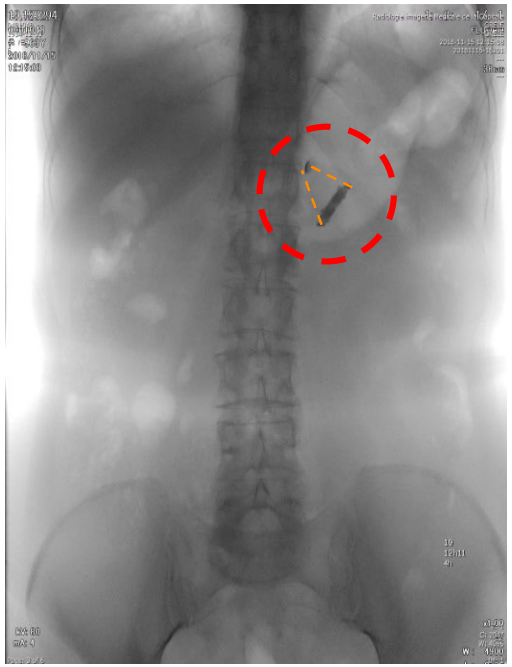
Gastric Retention is achieved by OLAR® triangle shape



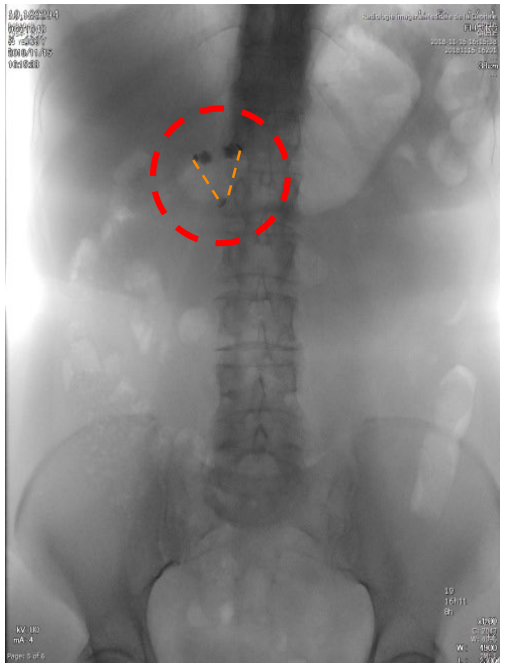
X-Ray example from Clexio **Phase 1 PK study**



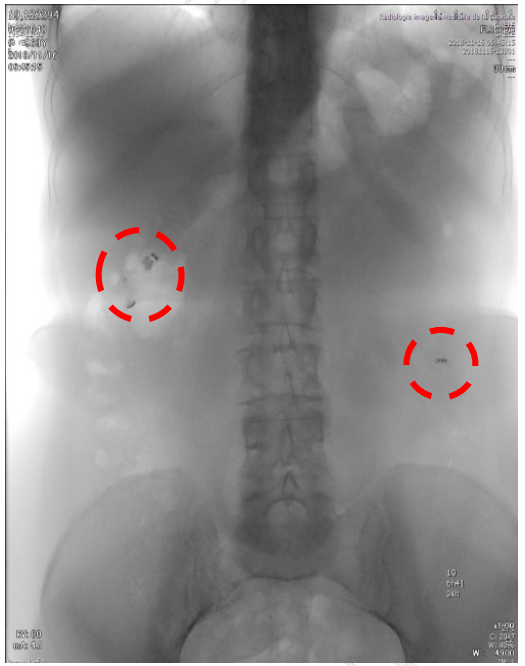
At 10 min



At 4 hr



At 8 hr



At 24 hr

OLAR® is in the stomach
(in its triangle shape)

OLAR® is in the colon
(triangle dis-assembled)

OLAR® differentiation vs other Extended Release formulations

	OLAR®	Extended Release formulations
Increases the drug retention time in the stomach and allows constant flow of the drug to the GI	✓	
Maximizes drug absorption (Bioavailability) of compounds with narrow absorption window that are mainly absorbed in the upper GI (e.g. Levodopa)	✓	
Reduces drug plasma fluctuations enabled by zero order-like release	✓	some
Formulation has to be tailor made for each drug		✓
Enables combination of different release rates	✓	

OLAR® development at glance

Drug delivery system, formulations and in-vitro testing methods were developed

IP:

- 5 patent families on the technology (expiry from 2037)
- First patents issued in US
- 1 patent family on technology utilization in Parkinson (CLE-600)

Extensive preclinical studies in pigs and dogs

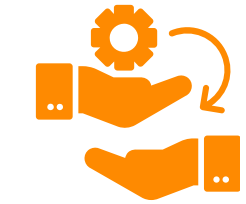
- No local or systemic toxicities identified after repeated dosing

Completed 2 Ph1 studies with the current prototype: promising imaging results (gastric retentive properties) and PK results, good safety profile

OLAR® utilizations

CLE-600

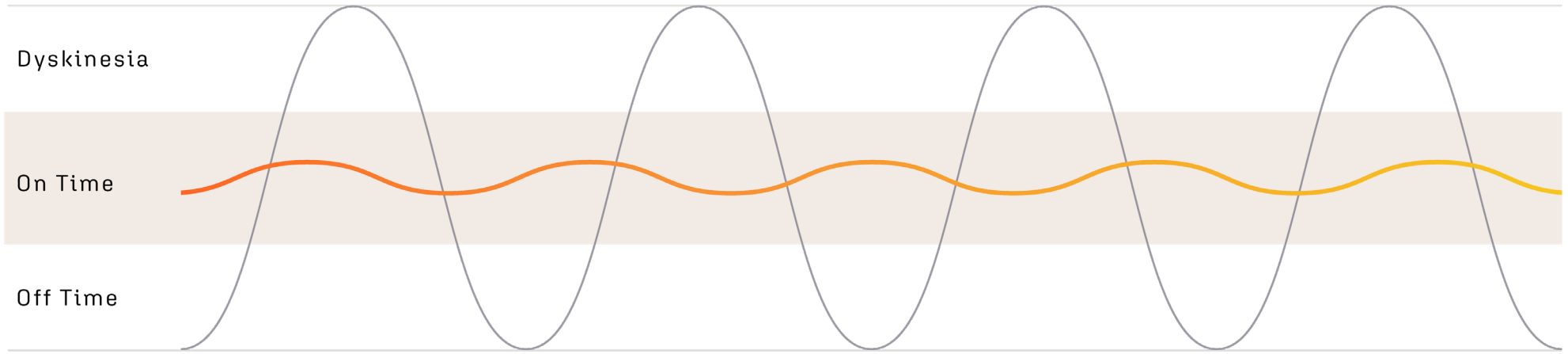
Levodopa/Carbidopa night pill based on OLAR®
Target: PD nocturnal symptoms, EMO…



Collaboration with other Pharma companies to improve drug performance – “Plug and Play” model

OLAR® utilization for Parkinson's disease – CLE-600

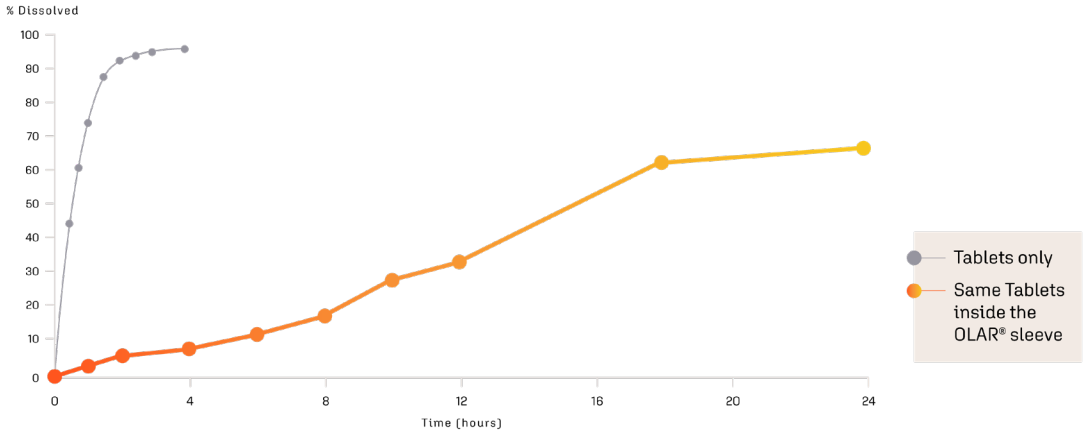
- Levodopa/Carbidopa formulation loaded onto the OLAR® platform
- Developed for PD nocturnal symptoms and Early morning OFF
- Successful Ph1 PK study in Healthy Volunteers
- Resulting in long extended release PK profile for LD capable to cover the night



* Illustration only, not actual data
* CLE-600 is currently an investigational product and not approved for marketing in the US

OLAR® utilization as “plug and play” model

Case study: Partner wants to improve the PK profile of one of its compounds:
e.g. maximizes drug absorption, e.g. reduces drug plasma fluctuations, e.g. increase half life



Partner prepares tablets with “mushroom” shape, using tablet punches supplied by Clexio

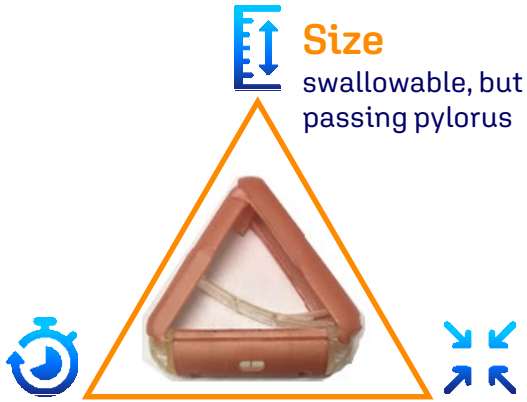
Partner ships the tablets to Clexio

Clexio team plug the tablets into the **OLAR®**

Clexio evaluates dissolution profile of the Partner tablets within the **OLAR®** (In-Vitro)

Partner to decide if to continue to In-Vivo studies

Clexio's Oral Long Acting Release (OLAR®) technology



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- Targeting more efficient drug absorption and lower drug plasma fluctuations. Continuous drug release for **8 – 24 hours, under fast and fed conditions.**
- **Versatile platform**, suitable for multiple APIs and enabling high drug loading (up to **750mg** total formulation).
- Drug formulation is **independent** of the OLAR®
- **Broad IP** position with protection through **2037.**

We welcome collaboration with other companies for the **OLAR® platform**

To enhance drug performance

Clexio Biosciences

You are welcome to contact us

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