

TRANSMAL: Translational research services for accelerated discovery of antimalarial drugs



Iñigo Angulo Barturen, PhD
CEO

13th January 2020, Bilbao



@CDTIoficial



Co-funded by EUREKA member countries and the European Union Horizon 2020 Framework Programme

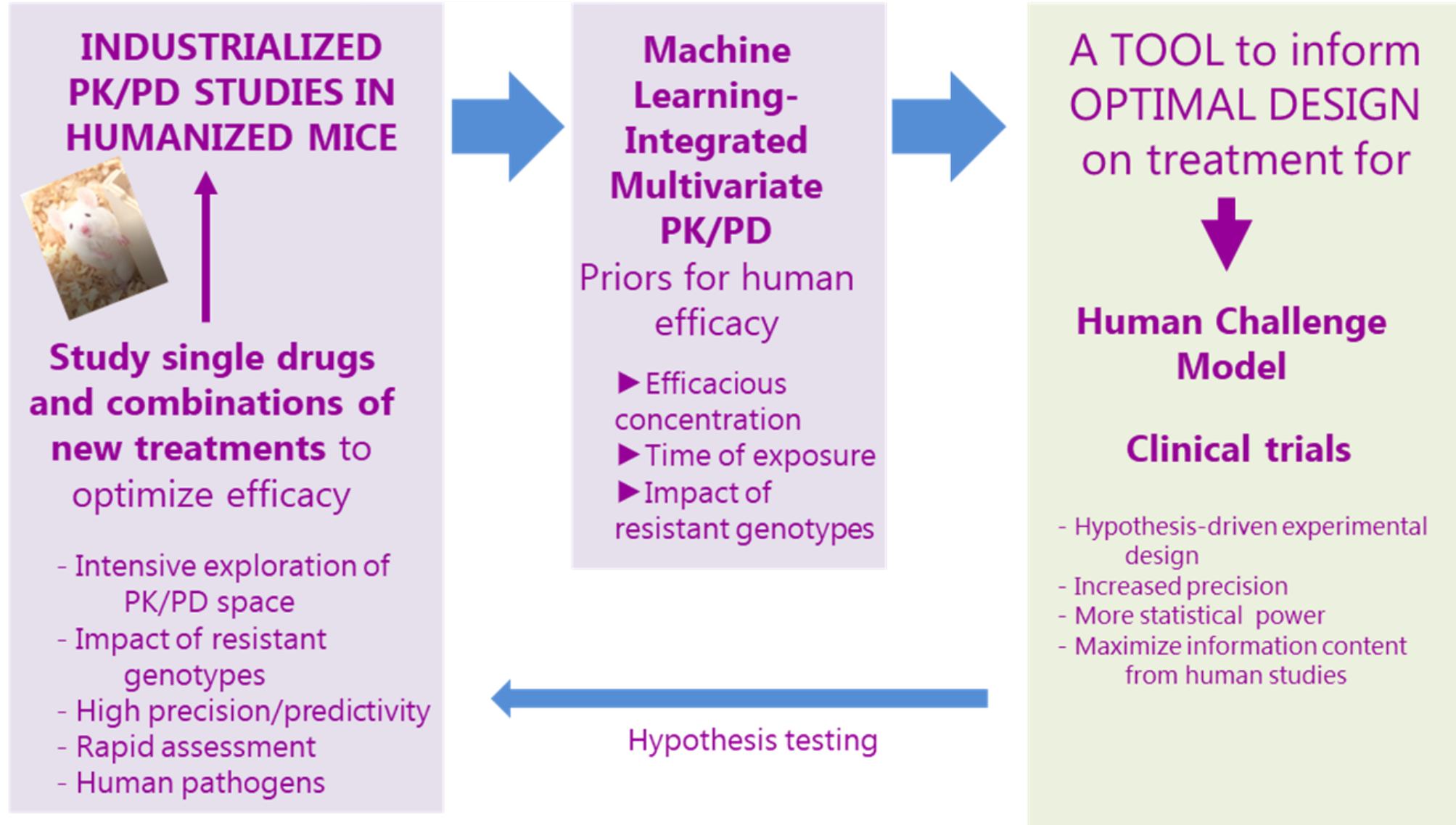


The company

The Art of Discovery

In vivo evaluation of antimalarial drugs in humanized mice





The Art of Discovery



4.8 US million dollars raised for development and evaluation of new predictive humanized mouse models 2017-2019



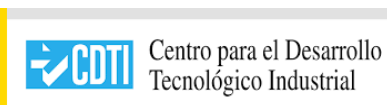
In vivo evaluation since 2017



Experimental facility 2016



TAD December 2015





The BIC Bizkaia center hosts TAD facilities.

The BIC Bizkaia is specifically aimed at promoters and start-ups and is operating since October 2014.



*State-of-the-art
animal facility to
host highly
immunodeficient
mice*



New *state-of-the-art* insectary to host infected mosquitoes



BILL & MELINDA
GATES *foundation*





The consortium

<https://tropiq.nl/>

- established in 2011, unique focus on global health and vector borne infectious diseases
- combines world class parasitology and entomology with state-of-the art drug discovery technologies
- current headcount: 18 (30% PhD)





<https://www.theartofdiscoverysl.com>

- established in 2016, focus on **global health and in vivo translational pharmacology** in humanized mouse models
- combines **world class expertise in preclinical pharmacology in humanized mouse models** with state-of-the art drug discovery technologies
- current headcount: 10 (40% PhD)

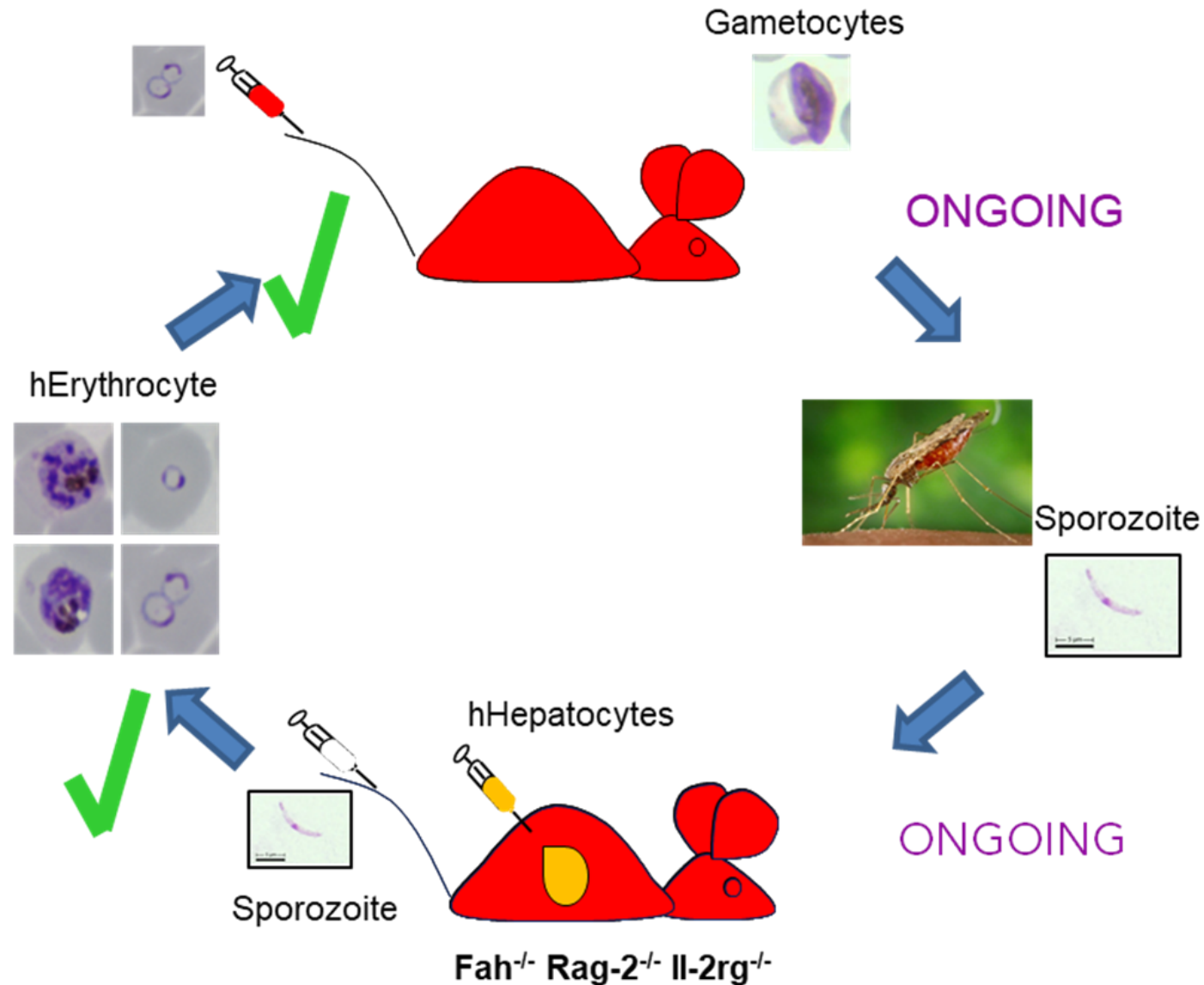
TRANSMAL aims at implementing a commercial, fee-for-service platform for cost-effective evaluation of the efficacy of antimalarial drugs.

The development of such treatments is key to meet the goal of global malaria elimination, but hampered by a lack of predictive pre-clinical models with sufficient throughput and level of standardization.

TRANSMAL will deliver enabling technology in the form of industrial-quality in vitro and in vivo models to predict the efficacious dose of candidate drugs.

TRANSMAL

The *P. falciparum* malaria cycle in humanized mice



@CDTIoficial



Co-funded by EUREKA member countries and the European Union Horizon 2020 Framework Programme

ANNEX 2: TRANSMAL TIME-ACTIVITY CHART

WP	Activity	Task	Partner
1.	Parasite production and preservation methods		
	1.1	Gametocyte preservation	
		1.1a test different methods in relation to gametocyte viability	TropIQ
		1.1b address infectivity to mosquitoes	TropIQ
	1.2	Sporozoite preservation	
		1.2a test different methods in relation to sporozoite viability	TropIQ
		1.2b address in vitro infectivity to human hepatocytes	TropIQ
2	In vivo gametocytaemia		
	2.1	Establish in vivo gametocytaemia	
		2.1a establish bone marrow transplantation	TAD
		2.1b evaluate endogenous gametocyte maturation	TAD
		2.1c produce in vitro gametocytes	TropIQ
		2.1d evaluate engraftment of stage V gametocytes	TAD
	2.2	Evaluate infectivity of engrafted mice	
		2.2a SMFA on cryopreserved blood	TropIQ
		2.2b direct feeding on engrafted mice	TropIQ
3.	PK/PD malaria transmission-blocking assay development		
	3.1	transmission PK-PD model	
		3.1a establish in vitro PD model	TropIQ
		3.1b Industrial in vivo assay development: compound dosing and PK	TAD
		3.1c Industrial in vivo assay development: ex vivo and in vivo efficacy (PD) analyses	TropIQ
4.	In vivo liver and secondary blood parasitaemia		
	4.1	Establish humanized mouse model	
		4.1a produce sporozoites	TropIQ
		4.1b Kinetics of liver and peripheral blood infection in sporozoite-infected HH-engrafted mice	TAD
5	PK/PD malaria liver stage assay development		
	5.1	liver stage PK-PD model	
		5.1a establish in vitro PD model	TropIQ
		5.1b Industrial in vivo assay development: compound dosing and PK	TAD
		5.1c Industrial in vivo assay development: ex vivo and in vivo efficacy (PD) analyses	TAD

A challenging project with a high scientific and logistical complexity

TROPIC HEALTH SCIENCES



@CDTIoficial



Co-funded by EUREKA member countries and the European Union Horizon 2020 Framework Programme

PROJECT OVERVIEW

E - TRANSMAL

Translational research services for accelerated discovery of antimalarial drugs

Time to completion 24 months

Total cost for all parts 2,378,747 €

TECHNICAL AREA

BIOLOGICAL SCIENCES / TECHNOLOGIES > Medical technology > Pharmaceutical Products / Drugs

MARKET AREA

MEDICAL / HEALTH RELATED > Other Medical / Health Related > Pharmaceuticals/fine chemicals

PARTICIPANT NAME	ROLE	COUNTRY	ORGANISATION TYPE	TOTAL COST
TropiQ Health Sciences	Main	THE NETHERLANDS	R and D Performing SME	1,100,000 €
The Art of Discovery S.L.	Partner	SPAIN	R and D Performing SME	1,278,747 €



The experience

EuroStars is an excellent tool to promote international cooperation among European companies because of the intensity and type of funding and its flexibility on the type of partnerships funded.

The support provided by EuroStars and, particularly, CDTI professionals is superb.

The EuroStars program is a fantastic opportunity to prepare for more ambitious projects.



The likelihood of being awarded and the intensity of the funding may heavily depend on the country(ies) of partner organizations.

The local project depend of the funding by agencies of its national government. The criteria of funding may be different.

EuroStars is organized as two-projects in one:

- Duplication of submissions (EuroStars and InterEmpresas).
- Proposals and reporting in two languages: English and Spanish
- Reporting every 6 months in duplicate (Eureka and CDTI)

No funding for project management.

There is a risk of lack of effective cooperation.



Address all the tasks to **prepare your proposal with sufficient time.**

Pay attention to the criteria of funding activities for InterEmpresas.
Make sure that all the activities in your workplan meet the rules of funding!!!

The business case, market analysis and marketing plan are essential pieces of the proposal.

Pay attention to the agreement between partners.
Unexpected difficulties might appear during the negotiations!



Be resilient and ...good luck!

