

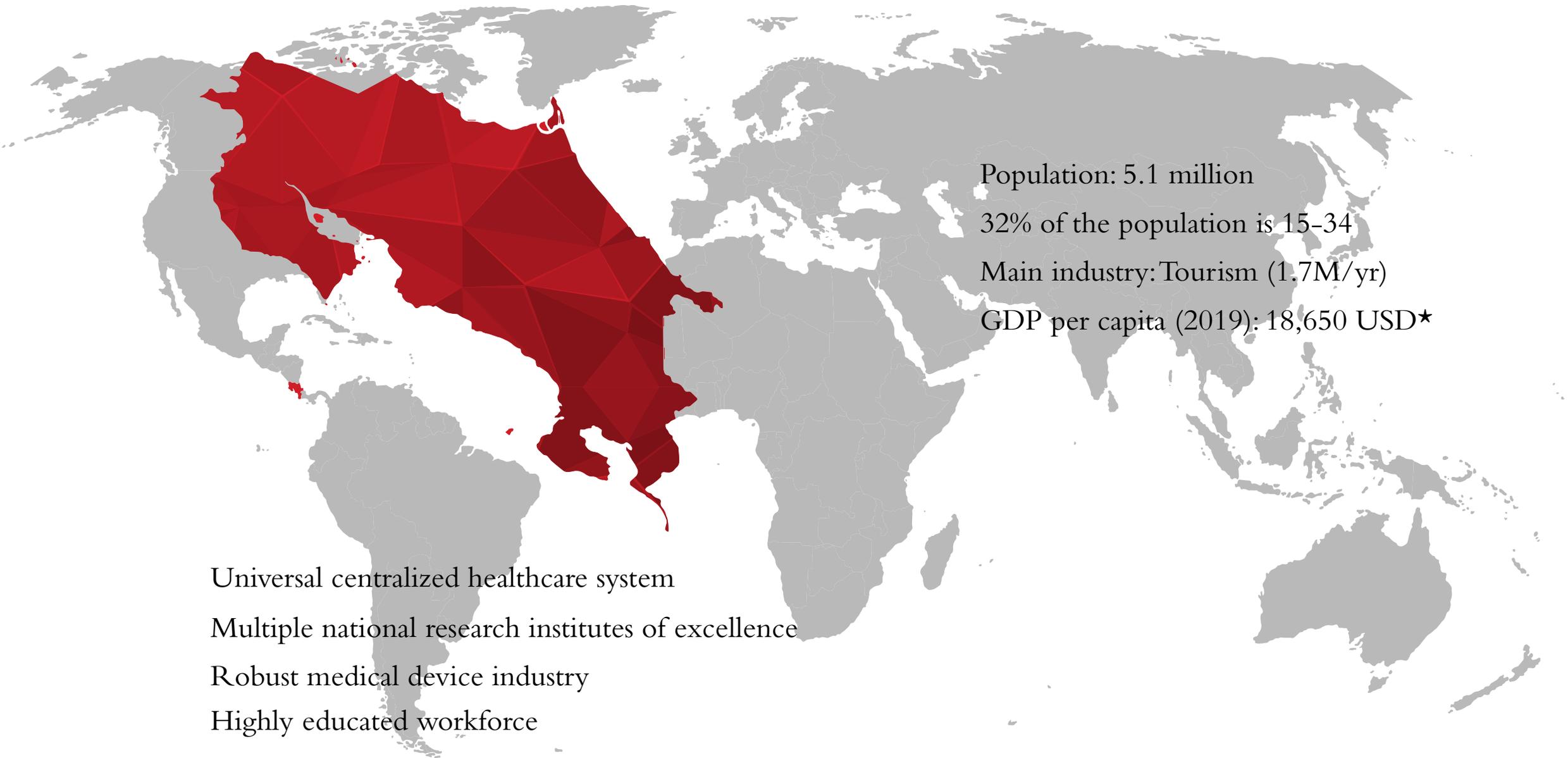


GCCW Panel Presentation

The Costa Rican response to the pandemic

And the importance of international cooperation

Christian Marín-Müller, MS, PhD
CEO, Speratum
San José, Costa Rica



Population: 5.1 million

32% of the population is 15-34

Main industry: Tourism (1.7M/yr)

GDP per capita (2019): 18,650 USD*

Universal centralized healthcare system

Multiple national research institutes of excellence

Robust medical device industry

Highly educated workforce

* Estimated data for 2020 by IMF

347



- Teleworking
- Borders closed
- 50% occupancy
- School/church closure
- Isolation orders
- Vehicular restrictions

March
삼월

642



- Specialized COVID care hospital opens
- Lockdown
- Telephone help service
- Smart reopening plan

April
사월

1,056



- 50% occupancy reopening
- Masks recommended in public transport
- Social bubbles

May
오월

3,459



- Community transmission declared
- Vehicular restrictions per region
- Masks mandatory in public

June
유월

17,820



- Airports reopened
- Vehicular Restrictions
- Mask mandatory Indoors
- Wastewater virus detection

July
칠월

48,780



- Antivirals
- Equine trial

August
팔월

코스타리카의 국가 관심 사업, 생명 공학

LIFE SCIENCES IS OF COSTA RICA'S NATIONAL INTEREST

2012년 2월 3일 금요일 공식 일간지 더 가제트에 게시된 행정 칙령 제 36952호에서는 다음과 같이 언명한다.:

Executive decree N° 36952 (published on Friday, February 3, 2012, in the official daily The Gazette) declares:

“우리 나라에서의 의료 및 생명 공학 기기의 연구, 개발 및 생산은 공공 및 국가의 이익이 될 것이다.”

“Research, development, and production of Medical and Biotech Devices on national territory to be of public and national interest”







TERUM

B

Rh

Negative for:
HBsAg/ Anti-HIV/ Ar
Syphilis

NAT non-reac
HIV-1 RNA (group
HIV-2 RNA/ HBV

No unexpected

TERUM

TERUM

B

Rh

Negative for:
HBsAg/ Anti-HIV/
Syphilis

NAT non-reac
HIV-1 RNA (gro
HIV-2 RNA/ HB

No unexpected

TE

B

Negative for
HBsAg/ Anti-H
Syphilis

NAT non-i
HIV-1 RNA (g
HIV-2 RNA/ F

No unexpect

TEF

B

Rh

Negative for
HBsAg/ Anti-HIV
Syphilis

NAT non-re
HIV-1 RNA (gro
HIV-2 RNA/ HE

No unexpect



INSTITUTO
CLODOMIRO
PICADO

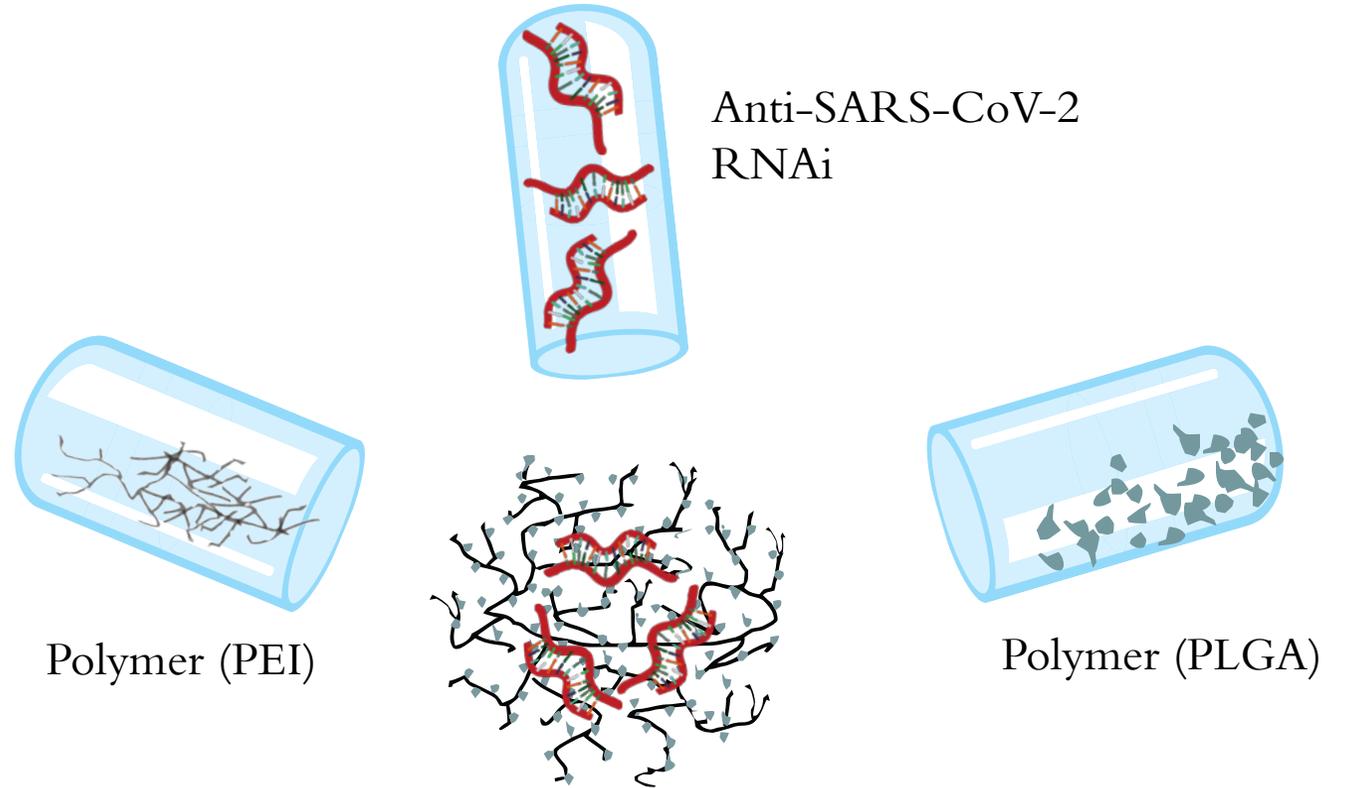
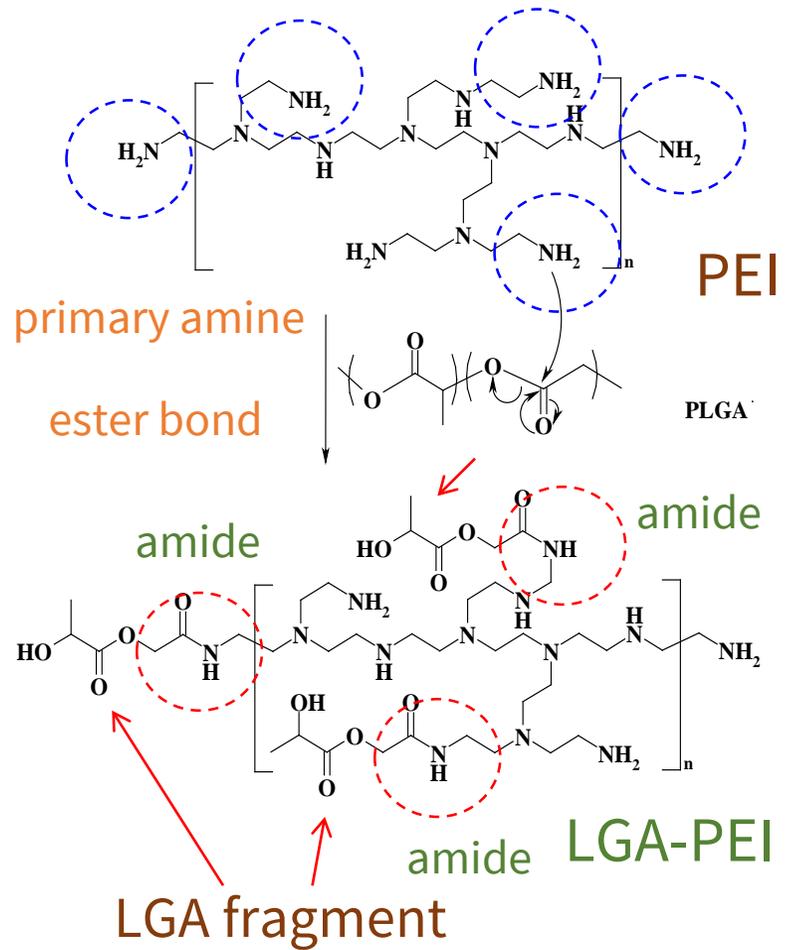




Spera
Delivering hope th



Nucleic acid drug delivery

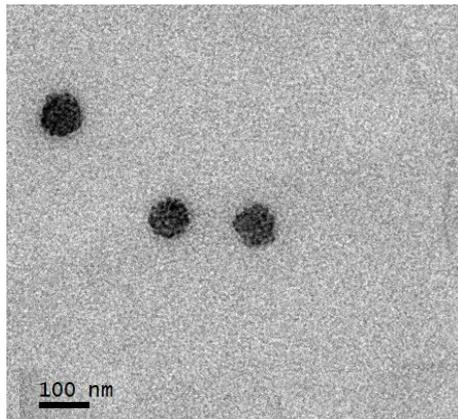


Liu, J. et al. *Nanomedicine* 11, 1971–1991

Therapeutic nanoparticles

Nanoparticle formation

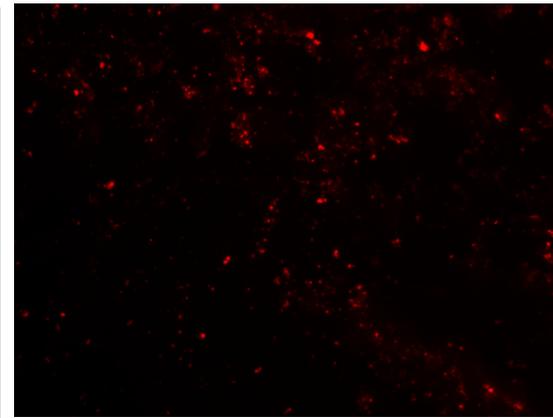
Electron microscopy



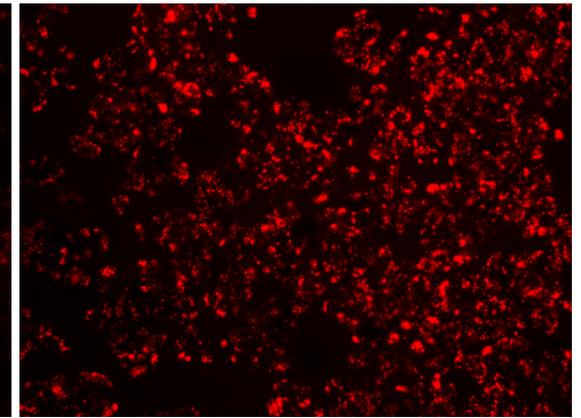
PANC1 cells transfected with fluorescent RNAi (24 hrs post-transfection)



1 mg RNAi
No vehicle

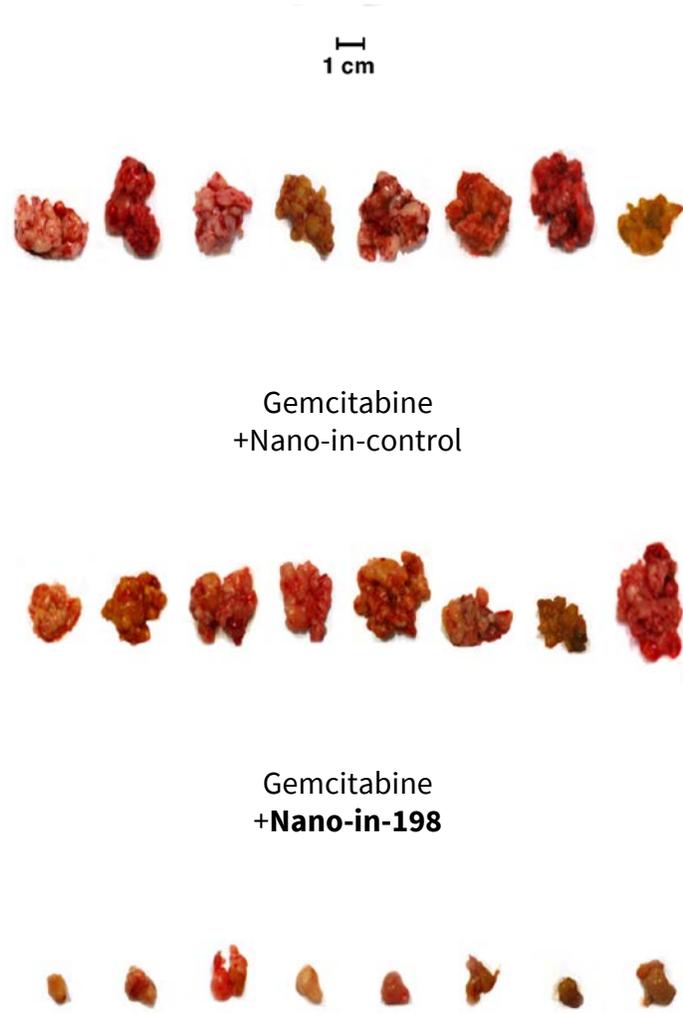


1 mg RNAi
Lipofectamine 2000



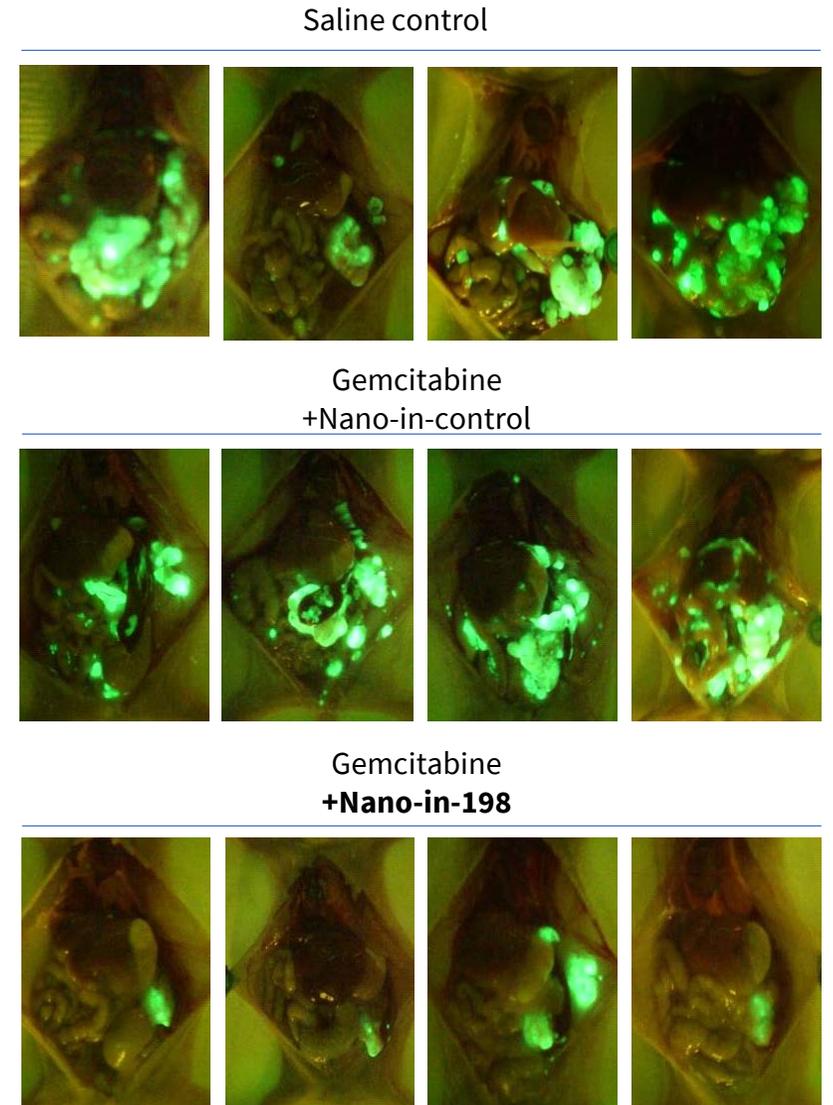
1 mg RNAi
Nano-in

Primary tumor size



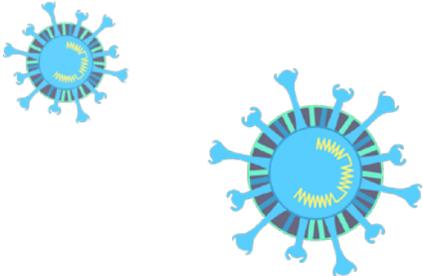
Pancreatic cancer xenografts

Mestastasis (fluorescent tumor cells)



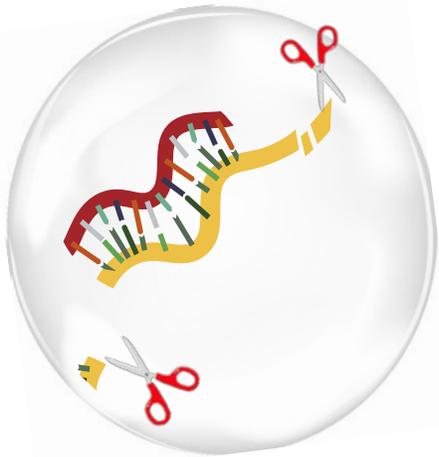
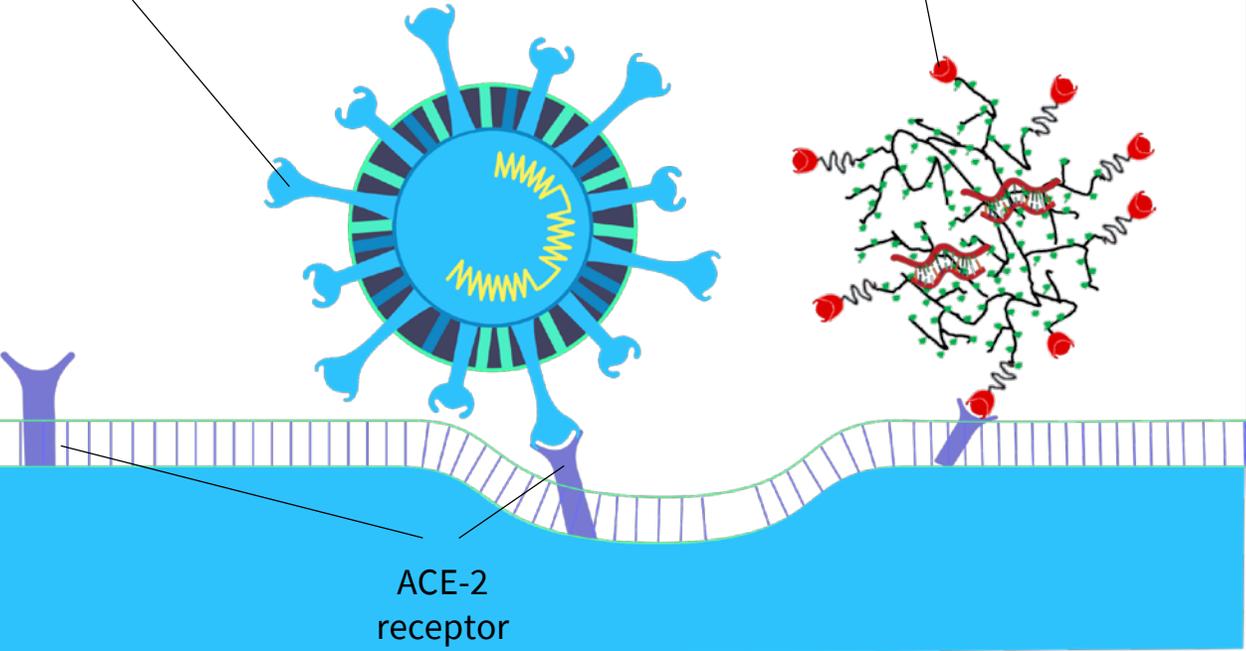
Anti-SARS-CoV-2

RNAi-Antiviral



ACE-2 targeting protein

Spike (S) protein



UNIVERSIDAD DE COSTA RICA



UCIMED



CeNAT
Centro Nacional de Alta Tecnología





Collaboration is critical for success

Coronavirus response

- Learning from S. Korea's highly successful response (testing, ICT adoption)
- Regulatory frameworks

Tech transfer and development

- Team-up with K-technology companies through co-development/license agreements

Growth capital

- Access to funding from S.Korea VC/PE and government sources to reach the next level of development