

Nanomedicine Blood Vessel Wound Diagnosis & Repair

A team of 2...

Maksim Baković

Biochemist, University of
Windsor, Ontario
Master in Systems and
Synthetic Biology, CRI /
Université de Paris

Ivan Posavec

Experience C level manager.
Previous positions include Vice
president of OMR Group
and CEO of M+ Group.
Completed 8 M&A processes and
an IPO. Ex. BCG. Harvard '10

Determined to tackle CVD

“Cardiovascular diseases (CVDs) are the leading cause of death globally. An estimated 17.9 million people died from CVDs in 2019, representing **32% of all global deaths**. Of these deaths, 85% were due to heart attack and stroke.”

—WHO

How do we want to do it?

Known facts about causes of CVD

Development of diagnosis test

Business side of things

Plans after the test

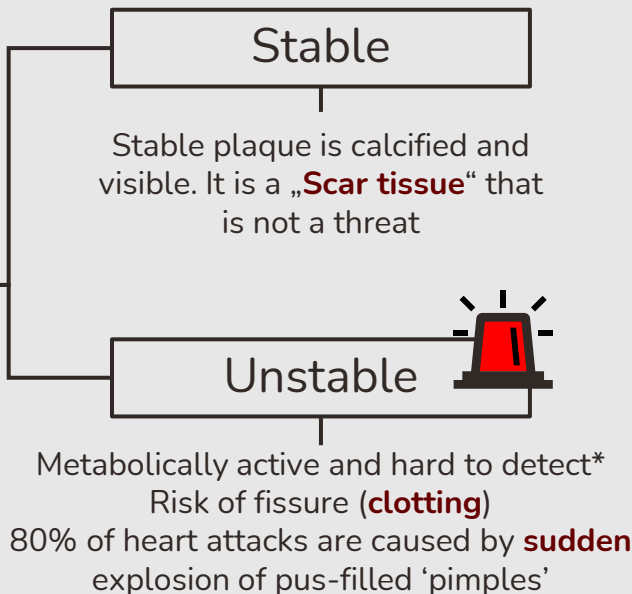
CVD is caused by unstable plaque

Unstable plaque can not be identified

Atherosclerotic Plaque

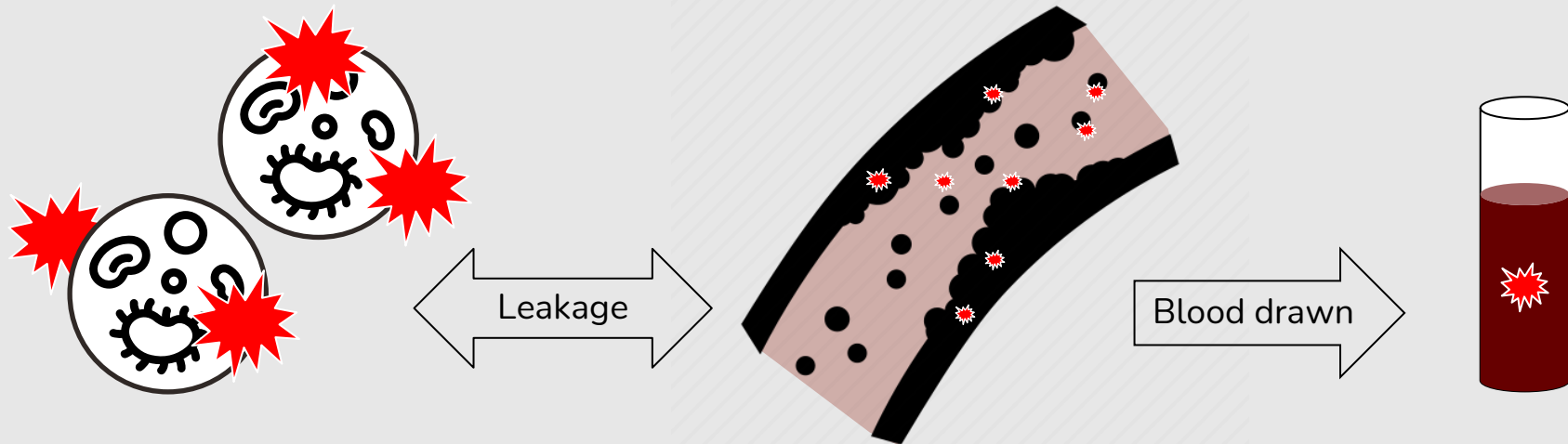
When injury happens in blood vessels white blood cells migrate to injury site to **clean** up junk, then leave. In sick people, those cells become **paralyzed** and slowly die plaque

Coronary CT can help identify zones where plaque exists but can't distinguish between the two plaque types.



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What is unstable plaque? It is a wound full of pus that literally poisons our blood



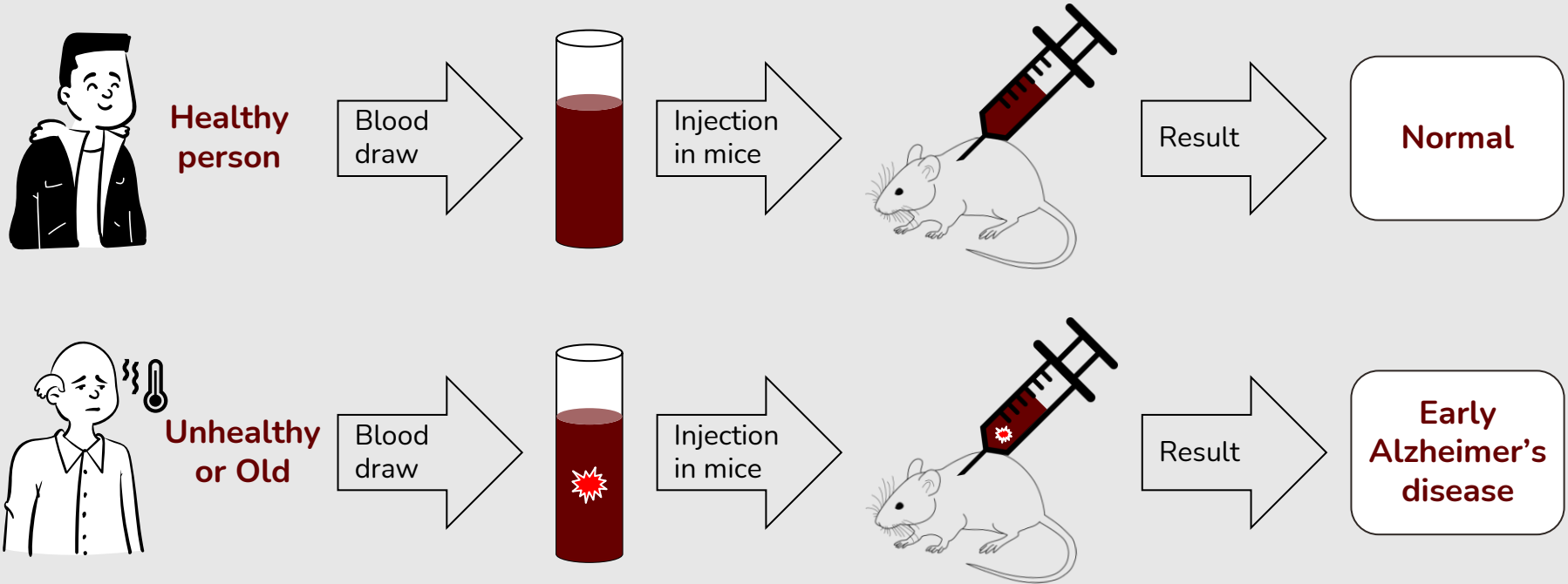
Dying cells release
toxic waste molecules -
"Pus"

Cholesterol particles soak up the pus and
carry it throughout the bloodstream.

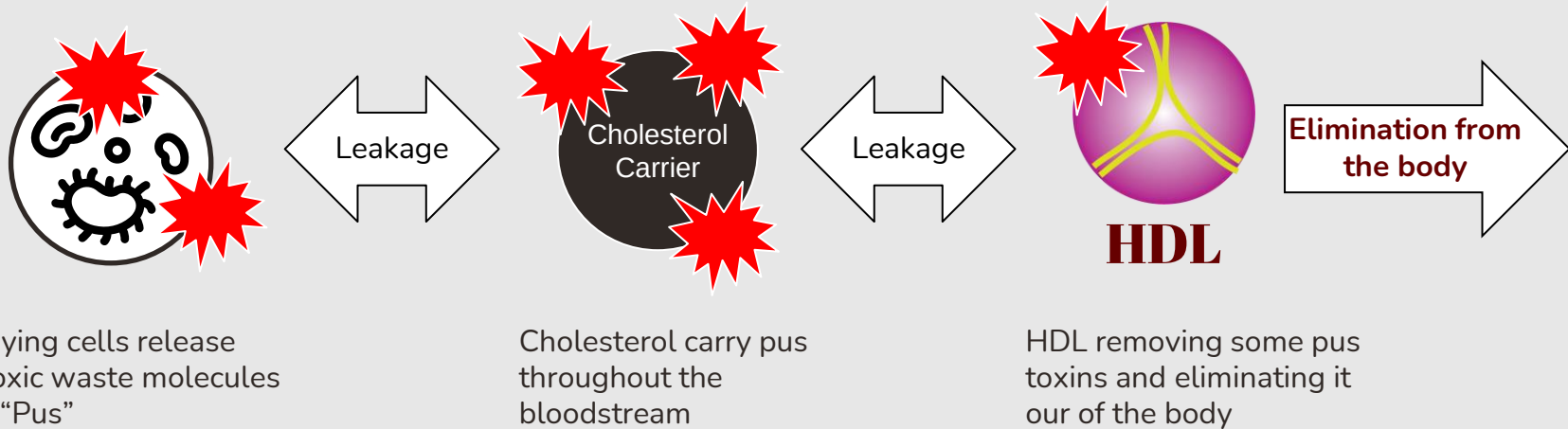
Presence in blood confirms
presence inside arteries.
Liquid Biopsy

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How do we know it poisons us? Through extensive experimental evidence



We also know that HDL (good cholesterol) has limited ability to remove these toxins



How do we want to do it?

Known facts about causes of CVD

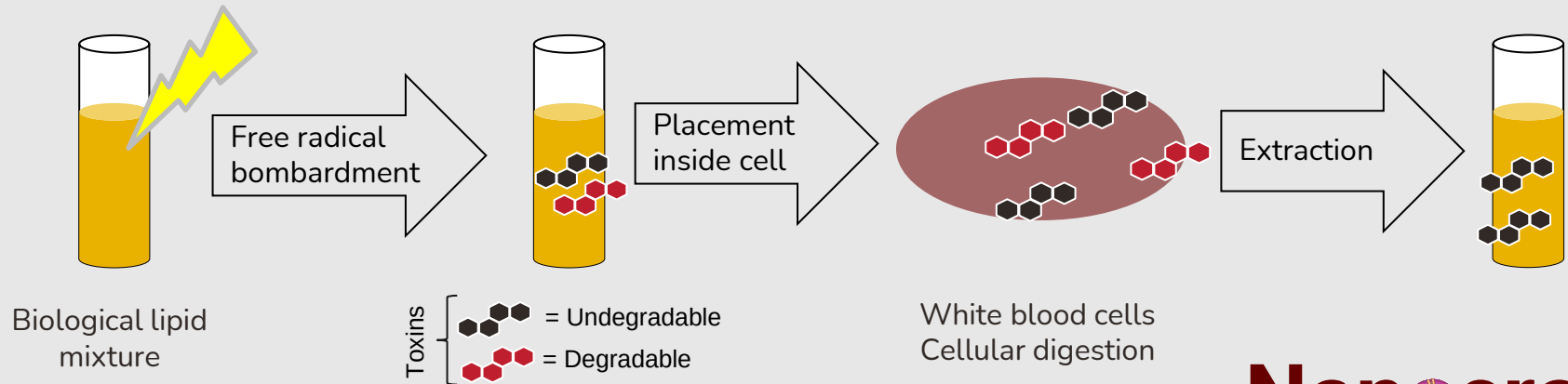
Development of diagnosis test

Business side of things

Plans after the test

We want to extract and identify all relevant metabolites from unstable plaque

First, we identify the full list of individual **metabolites from unstable plaque**. There are just 2 that are known but there could be many more and we must find them all to have an assay patent that can not be circumvented. Then we determine which are degradable (irrelevant) or **undegradable (relevant)**.



By cataloging metabolites and developing ASSAY PROTOCOL we would have a patent

Assay protocol is our final product for **patent application**. Catalog of all relevant metabolites ensures patent can not be circumvented i.e.; no substitute can be made. It also gives us invaluable information for potential treatment development in later stages of the project.



Cataloging is a key step as it ensures that all variants are included in the patent (i.e., no substitute for our test can be made)

Standardization of commercial assay protocol - ELISA

Our approach is scientifically sound and tested with renowned experts in the field



**Anatol Kontush,
BSc (Hons), PhD**

Research Director at the Research Unit 1166 ICAN of the National Institute of Health and Medical Research (INSERM) at the Sorbonne University and Pitié-Salpêtrière Hospital in Paris, France



**Richard Ian
Kitney OBE,
FREng, FRSE,
DSc (Eng), FCGI**

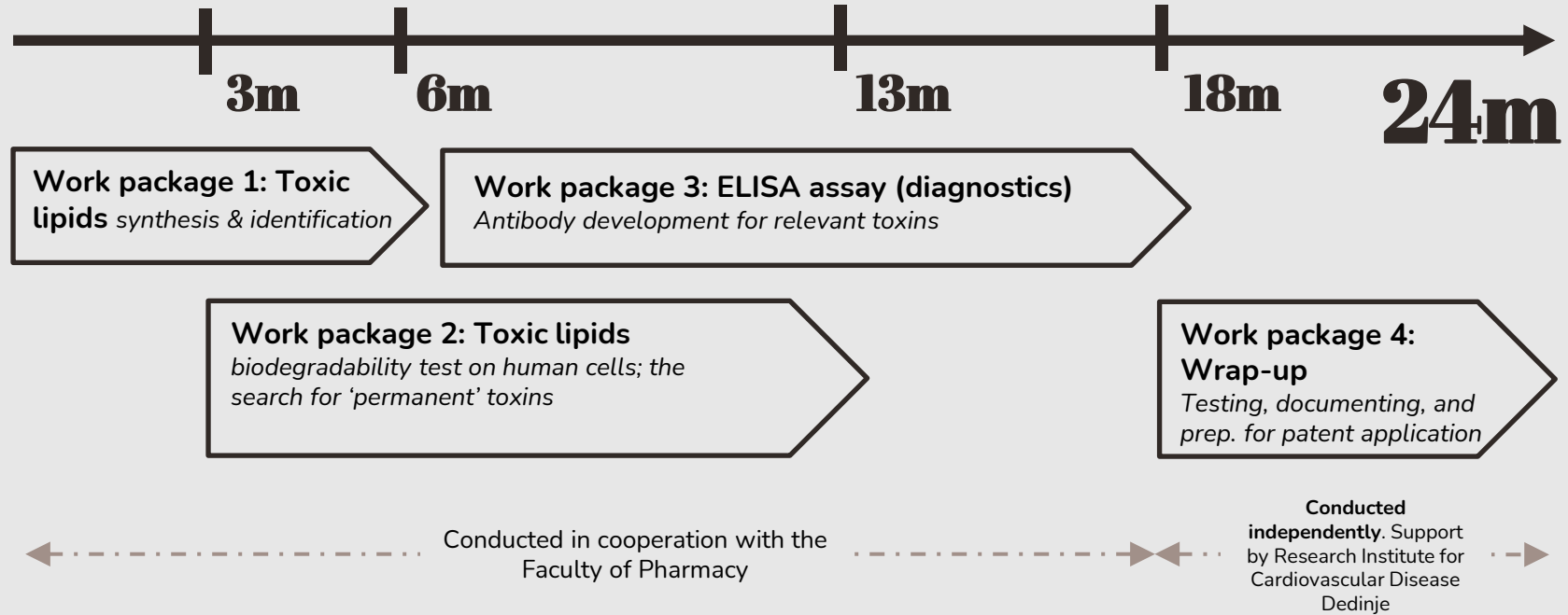
Professor of Biomedical Systems Engineering; Chairman of the Institute of Systems and Synthetic Biology; and Co-Director of the EPSRC National Centre for Synthetic Biology and Innovation



**Prof. Vladimir
Savić**

PhD in 1994 at School of Chemistry, Leeds University, England under supervision of Prof. dr Ronald Grigg FRS. Full professor at Department of organic chemistry, Faculty of Pharmacy, Belgrade University.

The work is split in packages; the first 3 are done with the Faculty of Pharmacy



Faculty of Pharmacy provides us with laboratory and a team of 8 PhDs

- Draft of cooperation agreement ready.
- Faculty would be paid for laboratory and staff costs. It would also receive a **10.5% share in profits from the IP for the diagnosis test**



Prof Vladimir Savić, PhD



Dragana Božić, MD PhD



Bojan Marković, PhD



Miloš Jovanović, PhD



Biljana Bufan, PhD



Tamara Gojković, PhD



Prof Jelena Antić-Stanković, PhD



Prof Anđelija Malenović, PhD



Support for diagnostic assay is secured from the Dedinje Research Institute



**Nebojša Tasić,
MD, PhD.**

Head of Center for
Cardiovascular Research:
Research Institute for
Cardiovascular Disease Dedinje

- Support expected in providing blood samples for initial trials.
- Approach confirmed and support committed on pro bono basis from the Head of Center for Cardiovascular Research, Phd. Nebojša Tasić



How do we want to do it?

Known facts about causes of CVD

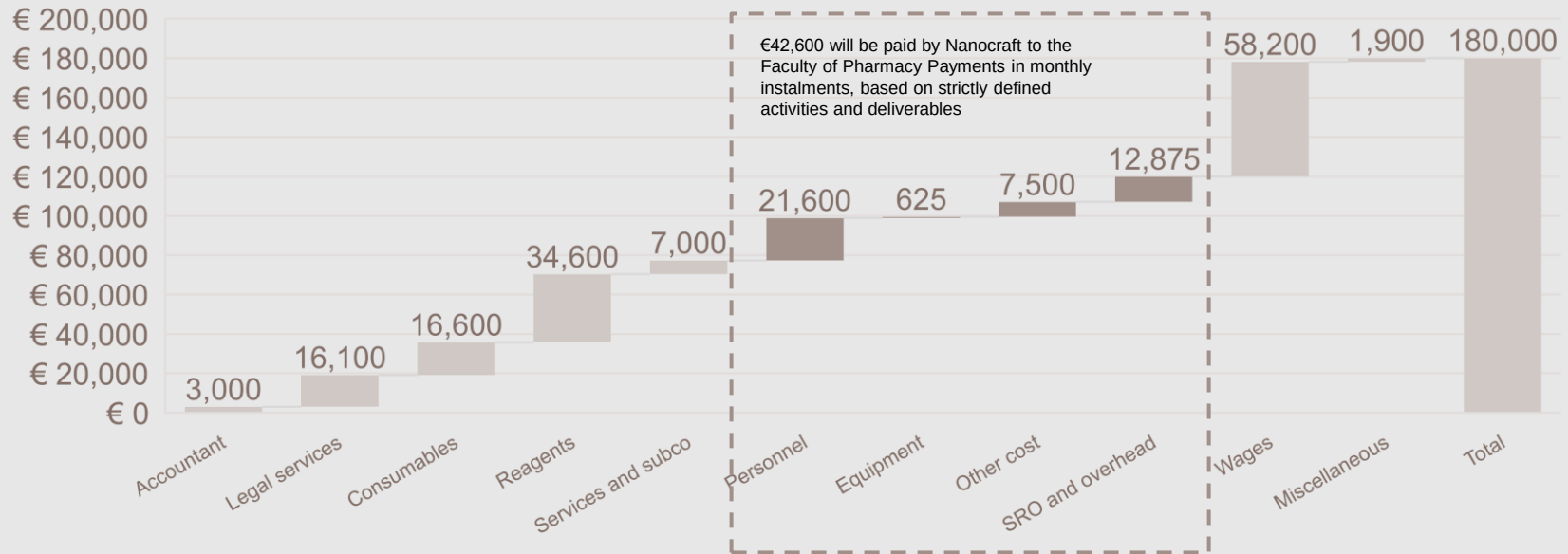
Development of diagnosis test

Business side of things

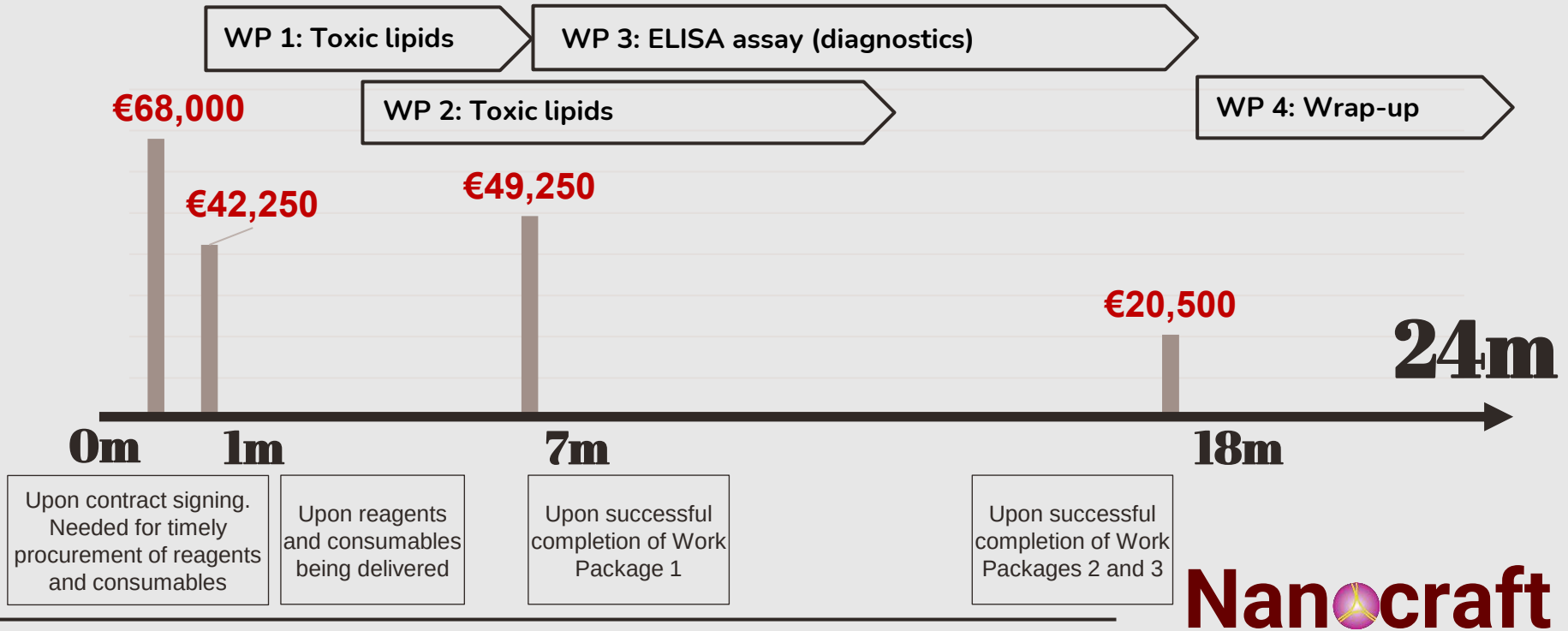
Plans after the test

Total investment needed is €180 k

Project Cost Breakdown



We ask for payments in 4 tranches upon milestones achieved



Proposed deal structure

**€180 k
investments**

FOR

**10% equity
including equity
participation
rights**

Industry valuations for pre-revenue companies are in €20 to €100 m range

Investor	Investment	Area	Claims
AlfaSigma Spa	PhaseBio	Biopharmaceutics for cardiopulmonary diseases	<i>PREREVENUE</i> €20 immediate €35 pre-rev. regulatory approval €190 on sales milestones + royalties
Shin Etsu Chemical Japan	Nano Carrier	Developing drug-encapsulating micellar nanoparticles for use with oncology treatments	<i>PREREVENUE</i> €13 for undisclosed majority stake + € 4.5 for additional shares + €8.5 in capital
Roche	Good Therapeutics	Conditionally active therapeutics	<i>PREREVENUE</i> €250
	Poseida Therapeutics Kiniksa Pharmaceuticals	Allogeneic CAR-T cell therapy products	<i>PREREVENUE</i> €110 plus up to €6,000 plus royalties

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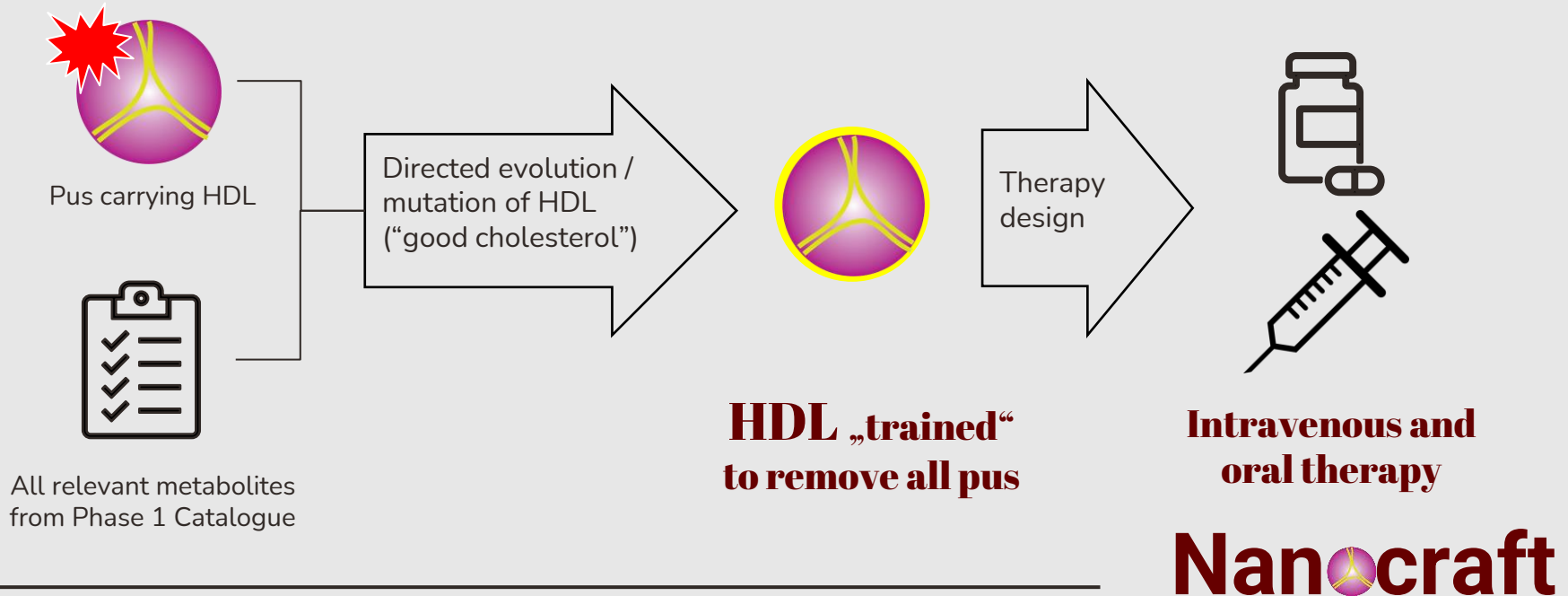
Development of diagnosis test

Business side of things

Plans after the test

After the test, we want to use good HDL to develop CVD TREATMENT

Phase 2



There would be several options for financing development of the treatment

Commercialization of the test

Commercialization of the test depends on Phase 1 results

Partnership with Big Pharma

In vitro diagnostics leaders are Roche, Danaher, Abbott, Siemens,...

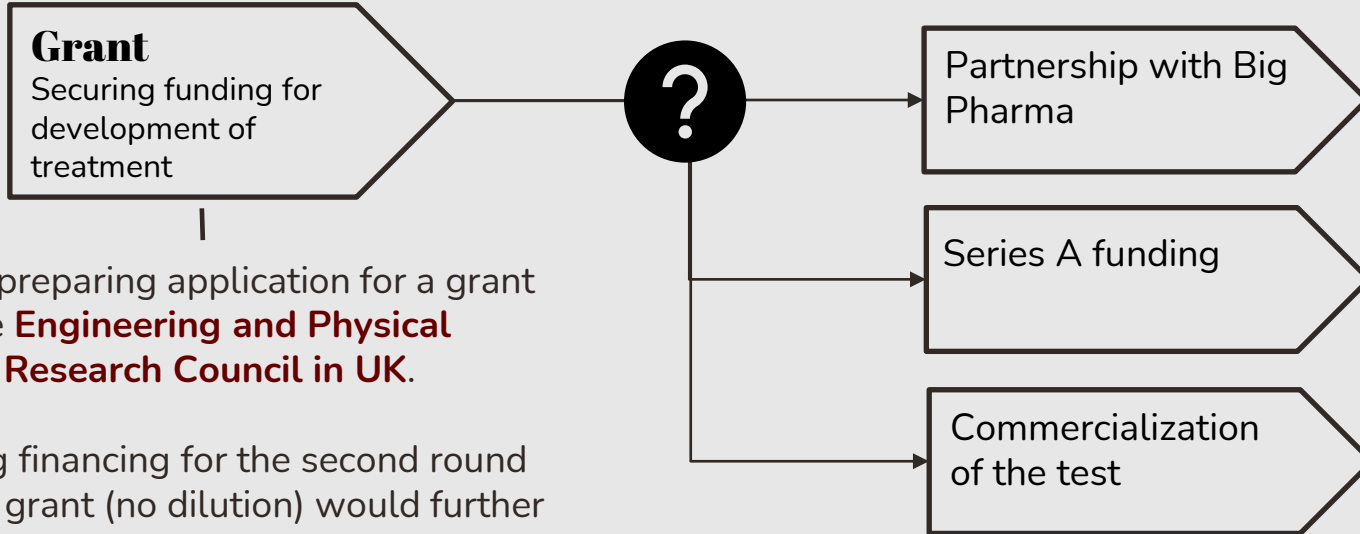
Series A funding

Raising another round from a global VCs specialized in nano and bio tech medicine

Grants

Successful Phase 1 would make us good applicants for numerous grants available in this space

We are already in talks for a UK grant to finance development of the treatment



We are preparing application for a grant from the **Engineering and Physical Science Research Council in UK.**

Securing financing for the second round through grant (no dilution) would further increase valuation 3-5x. There is much more money to be made in treatment than in diagnosis.

Thanks!

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