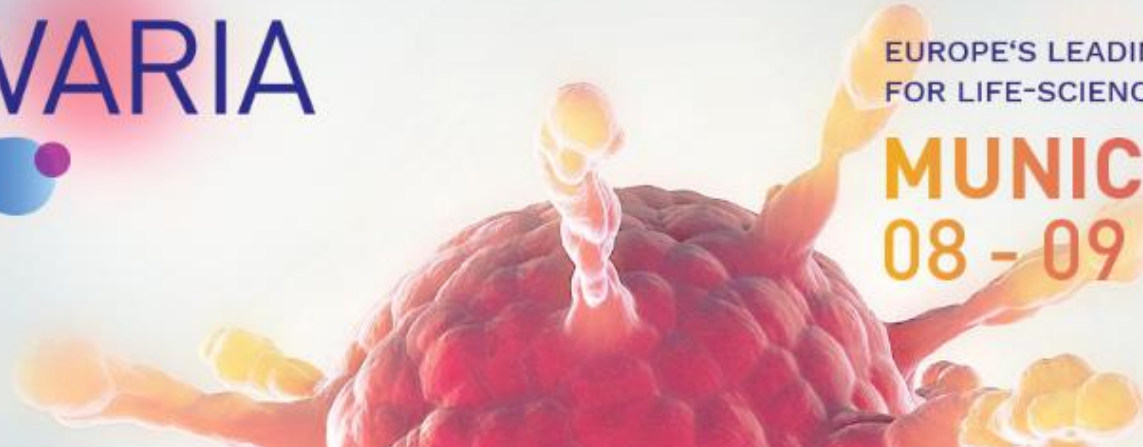




BIOVARIA

EUROPE'S LEADING SHOWCASING EVENT
FOR LIFE-SCIENCE TECHNOLOGIES

MUNICH
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N10

NTIMP3 PEPTIDE A NEW THERAPY FOR DIABETIC NEPHROPATHY

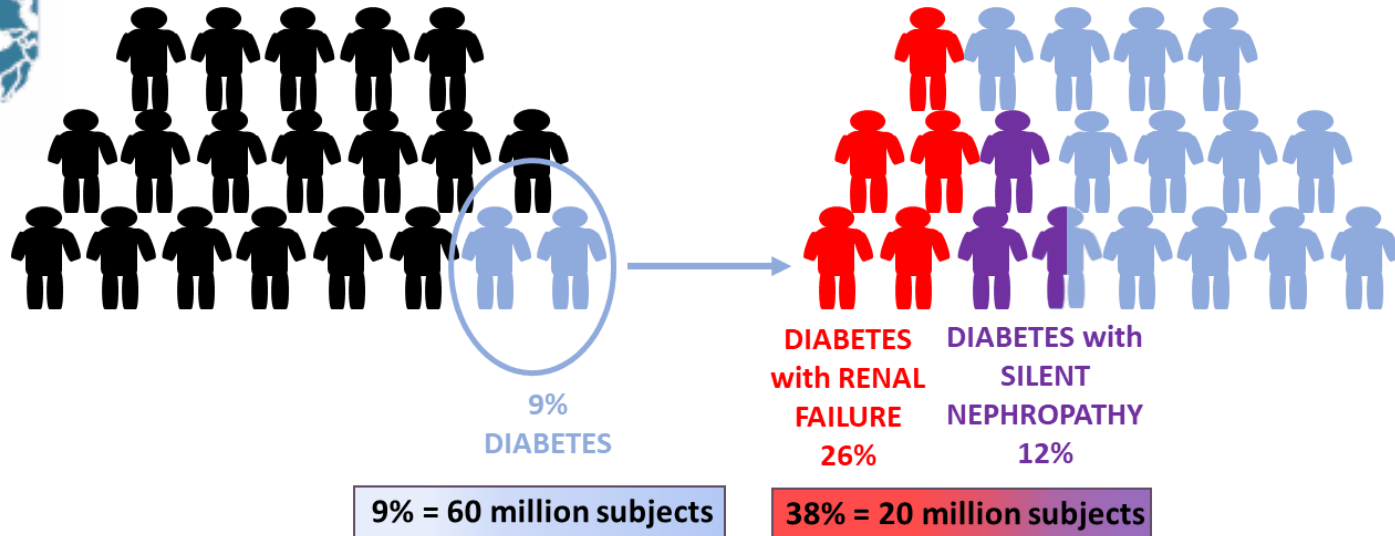
Rossella Menghini, Massimo Federici, Viviana Casagrande, Stefano Menini



SAPIENZA
UNIVERSITÀ DI ROMA



THE PROBLEM TO BE SOLVED



DIABETIC NEPHROPATHY IS AMONG THE TOP THREE CAUSES OF TERMINAL KIDNEY DISEASE IN THE WESTERN WORLD.

THERE IS CURRENTLY NO SPECIFIC THERAPY FOR DIABETIC NEPHROPATHY

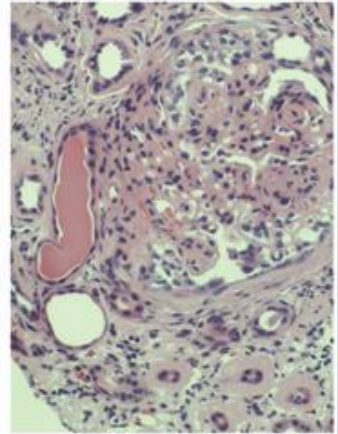
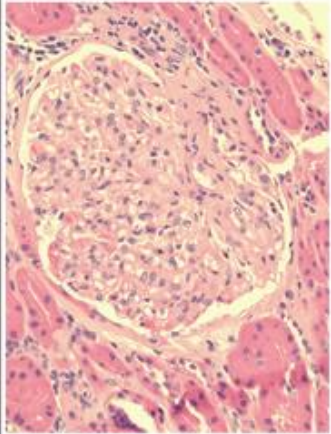
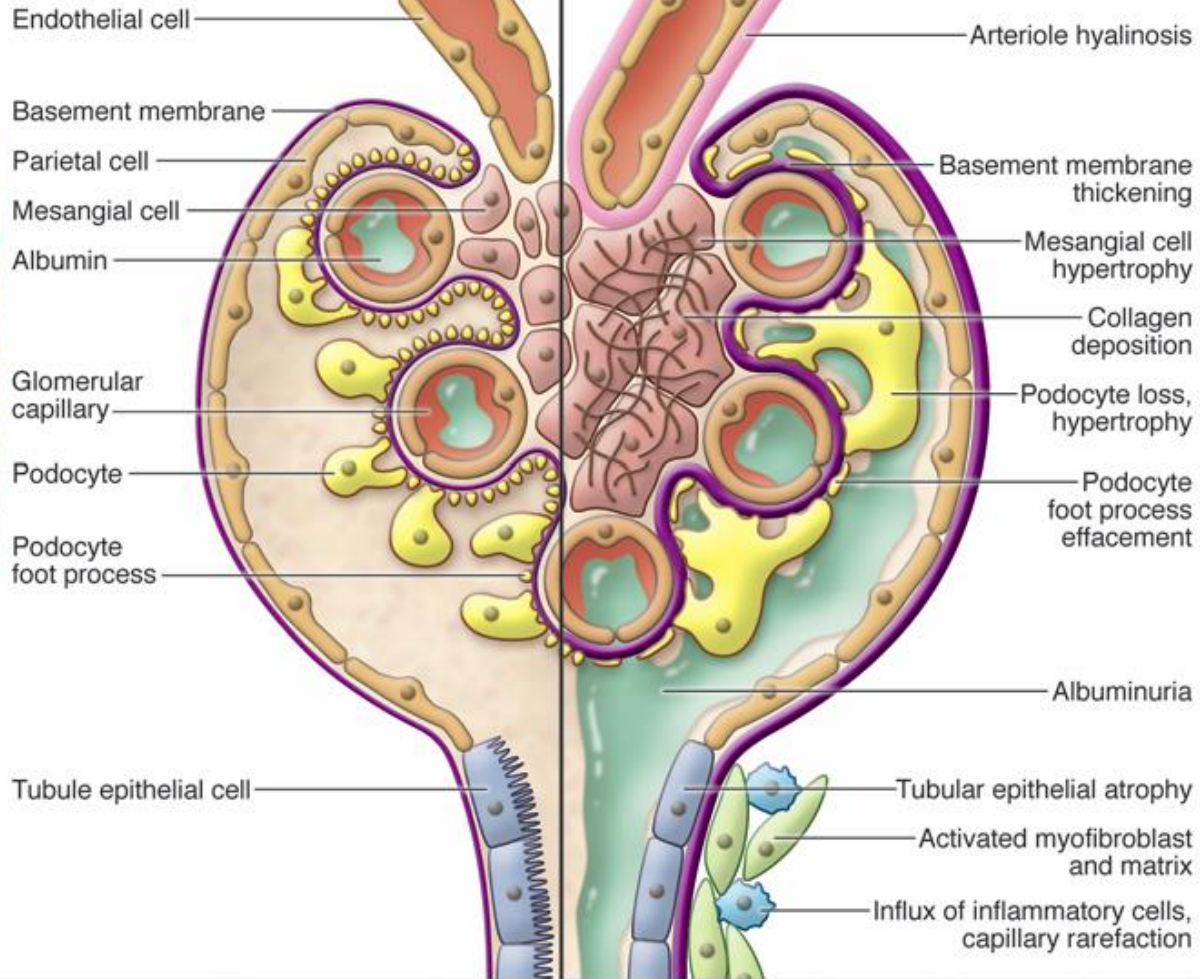


therapies aim at improving the metabolic profile and hypertension control

NO DRUGS INTERFERING WITH SPECIFIC MECHANISMS OF THE PATOLOGY ARE AVAILABLE

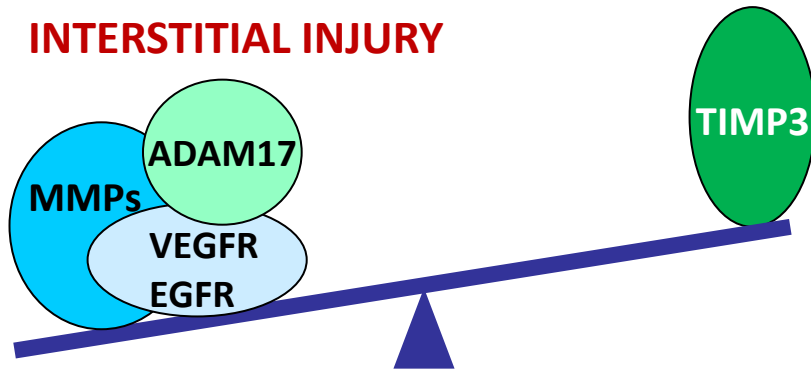
Healthy

DKD

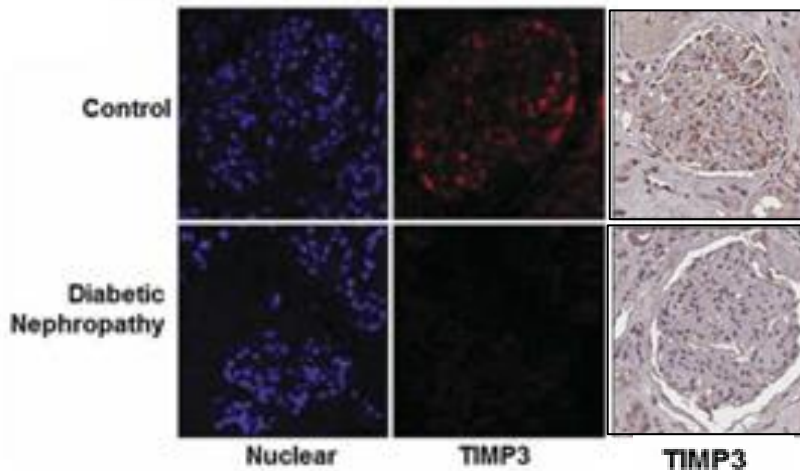


TISSUE INHIBITOR OF METALLOPROTEINASES-3 (TIMP3)

**INFLAMMATION
FIBROSIS
INTERSTITIAL INJURY**

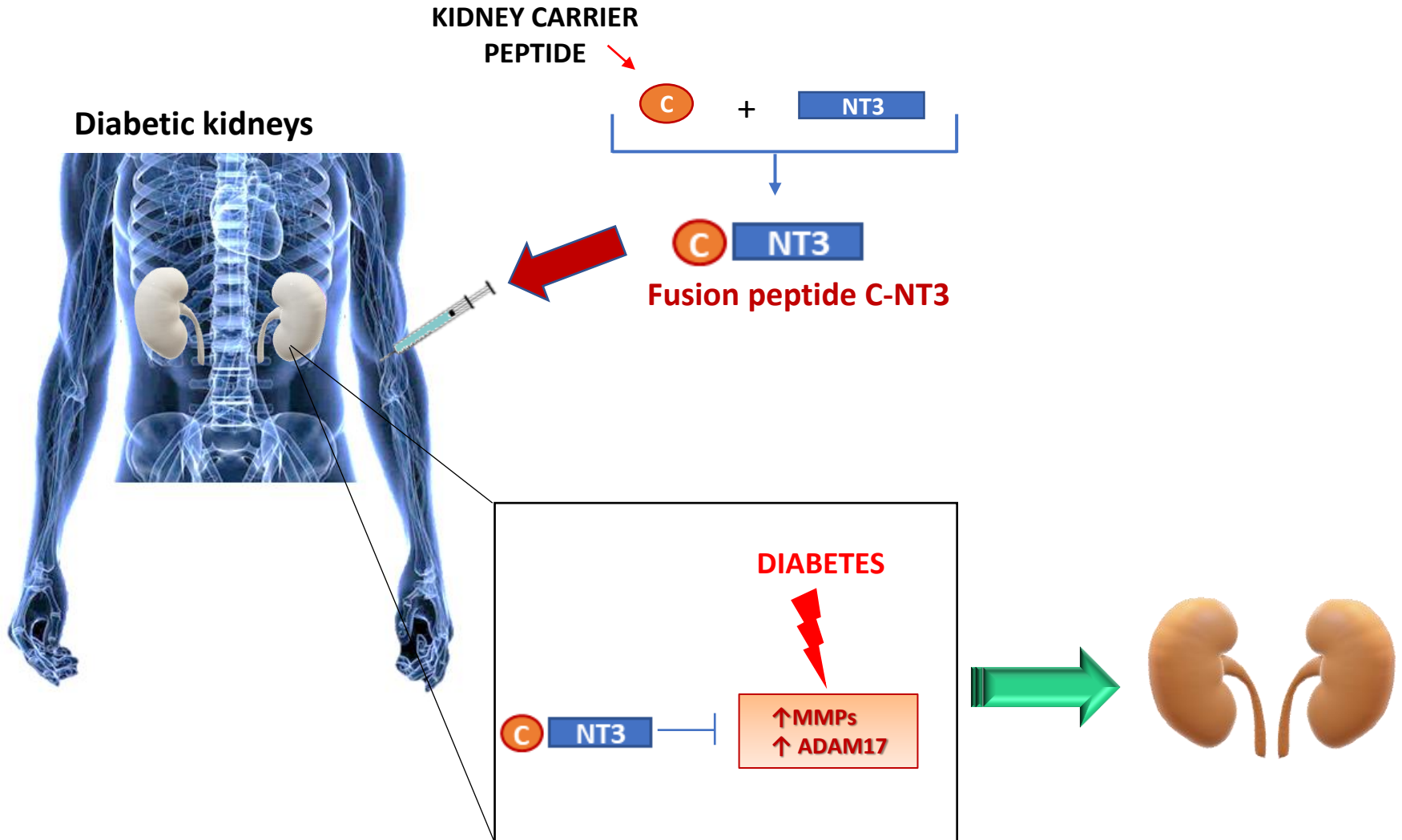


**TIMP3 IS THE MOST HIGHLY EXPRESSED
TIMP IN THE KIDNEY AND HAS A VERY
BROAD PROTEASE INHIBITION PROFILE**

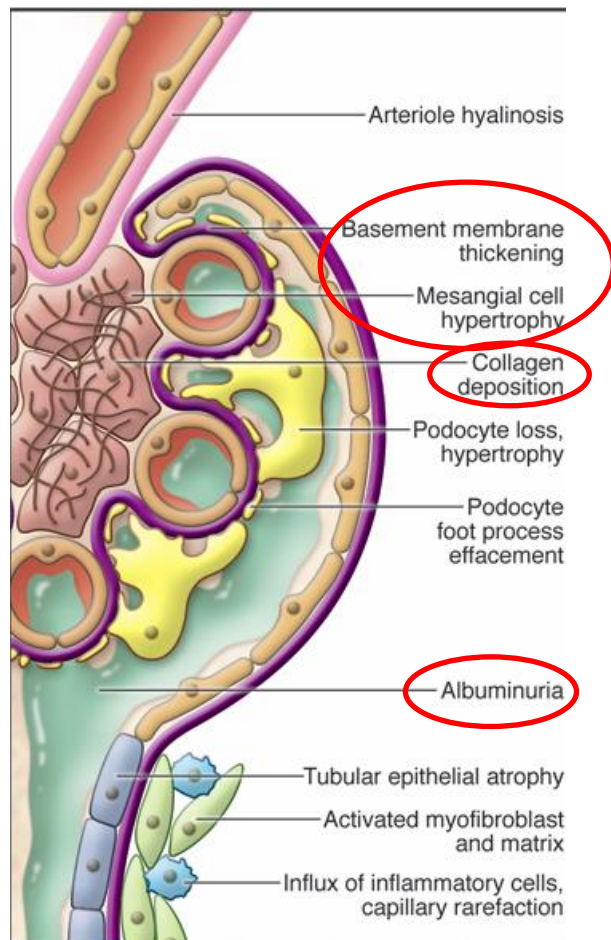
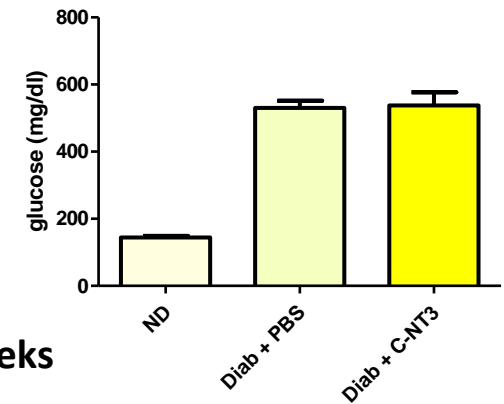
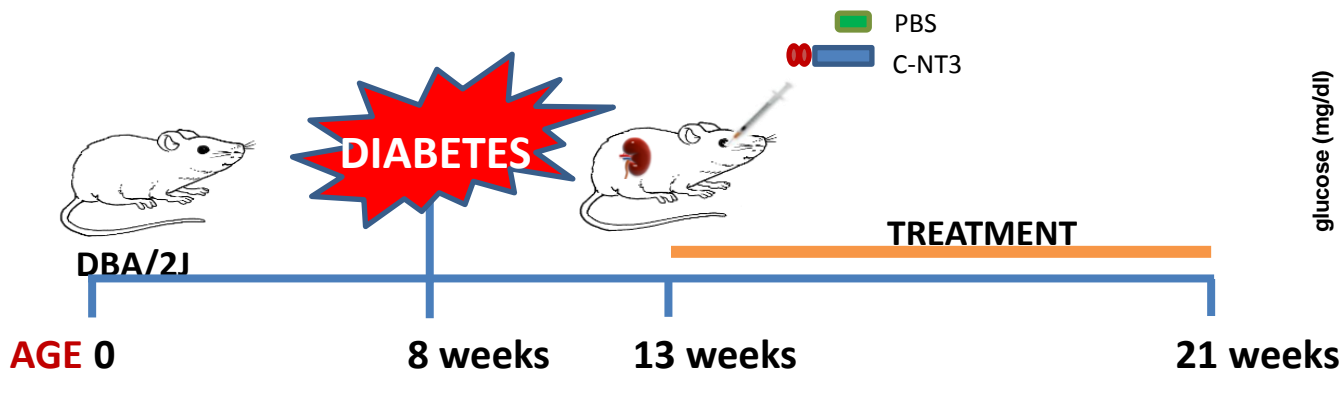


**KIDNEY TIMP3 EXPRESSION IS REDUCED
IN DIABETIC PATIENTS, CONTRIBUTING
TO THE ONSET AND PROGRESSION OF
DIABETIC KIDNEY DISEASE**

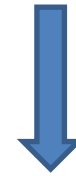
OUR SOLUTION TO THE PROBLEM



TO RESTORE HIGH TIMP3 ACTIVITY SPECIFICALLY IN THE KIDNEY



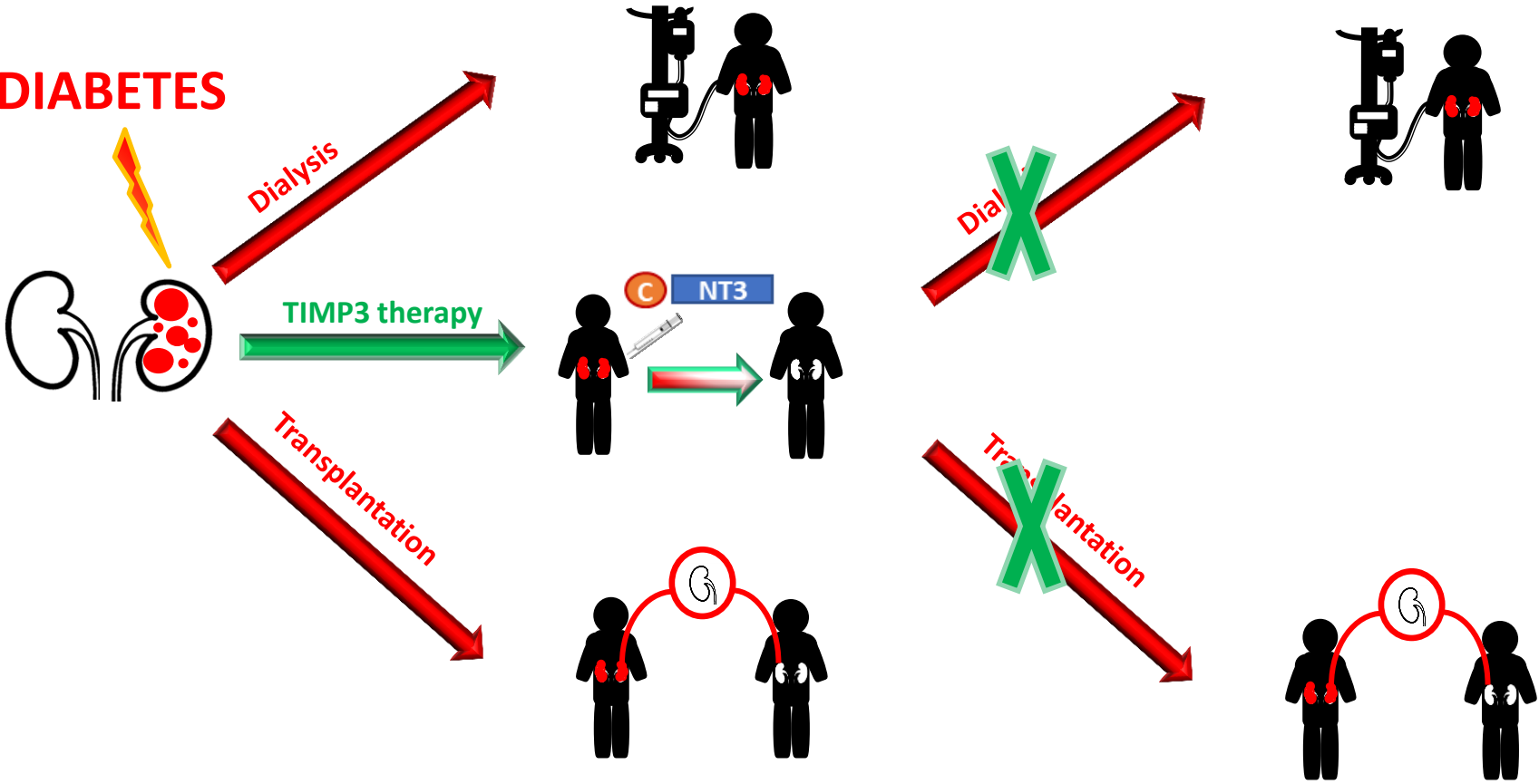
C-NT3 treatment reduces kidney glomerular lesions, Fibrosis and albumin concentration in the urine



It may prevent or reduce the progression of diabetic nephropathy independently from glycemic control

COMPARISON WITH EXISTING SOLUTIONS

DIABETES



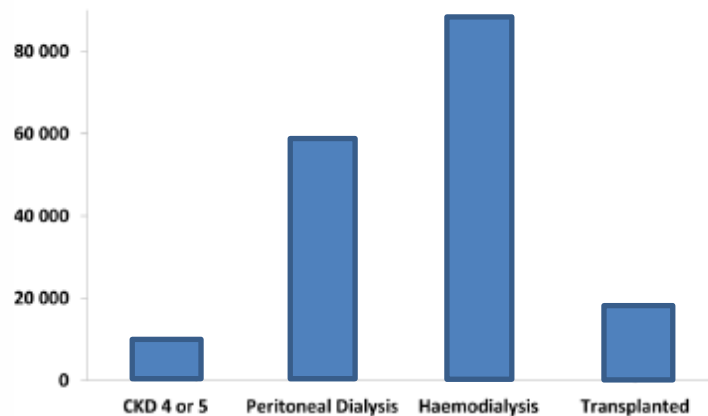
COMMERCIAL POTENTIAL

GLOBAL DIABETIC NEPHROPATHY MARKET IS ESTIMATED TO REACH **\$3,826 MILLION BY 2024**

Major factors contributing to the growth of the global diabetic nephropathy market include increasing prevalence of diabetic patients across the globe

COSTS INCREASE EXPONENTIALLY WITH INCREASED CHRONIC KIDNEY DISEASE STAGE

Cost [€]/year



REV ASSOC MED BRAS 2018

DRIVERS FOR LOWER COSTS

PREVENTING
COMPLICATIONS

SLOWING CKD
PROGRESSION

SLOWING ESRD
PROGRESSION

FOCUSING DISEASE MANAGEMENT AND TREATMENT EFFORTS ON PREVENTING OR SLOWING THE PROGRESSION FROM EARLY TO LATER STAGES OF CKD IN DIABETIC PATIENTS MAY BE KEY IN REDUCING THE SUBSTANTIAL LONG-TERM COSTS OF DIABETIC KIDNEY DISEASE.

DEVELOPMENT STATUS

- ✓ **C-NT3 INHIBITS THE ACTIVITY OF ITS TARGETS IN VITRO**
- ✓ **C-NT3 TREATMENT IMPROVES KIDNEY FUNCTIONS IN A MURINE MODEL OF LONG TERM DIABETIC RENAL PATHOLOGY**

ONGOING

GENERATION OF HUMAN PLURIPOTENT STEM CELLS (iPSc) DERIVED KIDNEY ORGANOIDs TO OBTAIN A PREDICTIVE RESPONSE OF C-NT3 PEPTIDE ACTION AND SAFETY IN HUMAN KIDNEY CELLS



Ministero dello Sviluppo Economico

Domanda numero: 762018000024806

Data di presentazione: 26/04/2018

IT patent application filed: 04/2018

**PCT patent application
filed: 01/2019**

WIPO



PCT

The International Patent System

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Receipt of Electronic Submission

The Receiving Office (RO/IB) acknowledges the receipt of a PCT International Application filed using ePCT-Filing. An Application Number and Date of Receipt have been automatically assigned (Administrative Instructions, Part 7).

Submission Number: 050482

Application Number: PCT/IB2019/050482

Date of Receipt: 21 January 2019

Receiving Office: International Bureau of the World Intellectual Property Organization

Your Reference: 10664

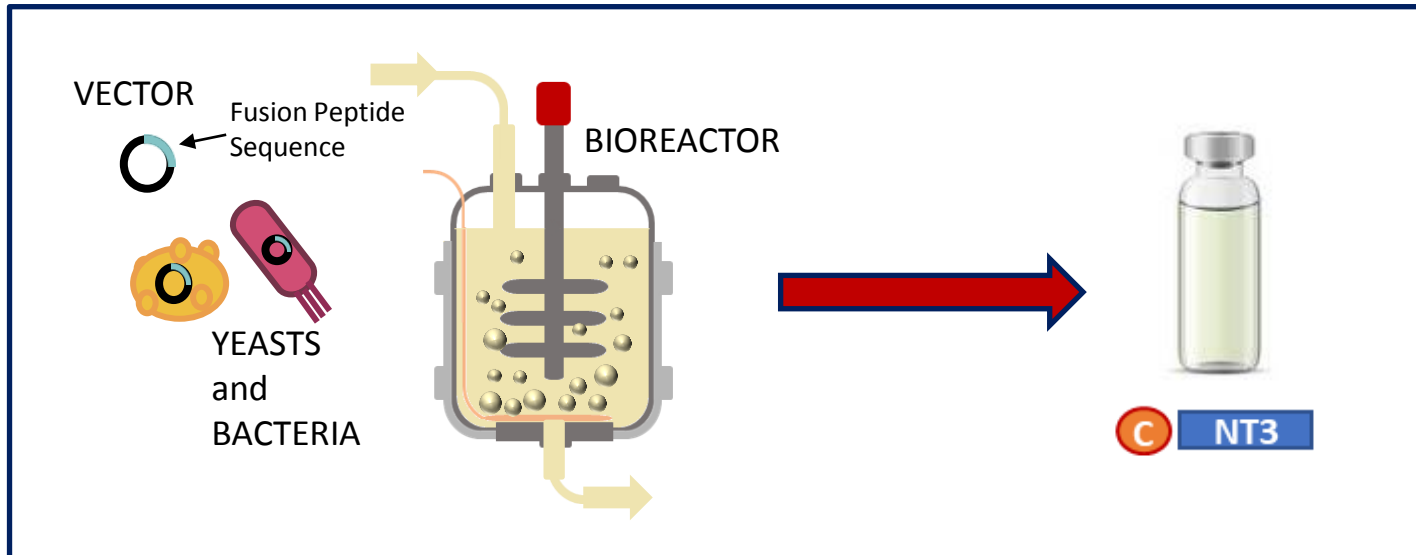
Applicant: UNIVERSITA' DEGLI STUDI DI ROMA "TOR VERGATA"

Number of Applicants: 2

Title: USO DI UN PEPTIDE DERIVATO DALLA PROTEINA UMANA
NTIMP3 NELLA TERAPIA DELLA NEFROPATIA DIABETICA

RESOURCES NEEDED

- ✓ To define the product formulation and start with the clinical development
- ✓ To develop an efficient approach to produce high-purity recombinant peptide.



RISKS

- ✓ Insufficient efficacy in validation study in human 3D organoid.
- ✓ Side effects or insufficient efficacy in human clinical trial Phase I/II.
- ✓ Side effects or insufficient efficacy of a novel biological drug substance.