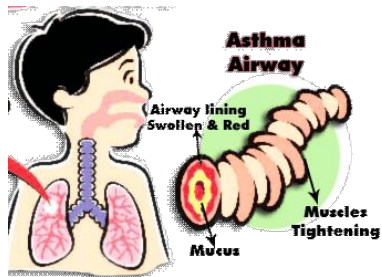


PAT-U-PAMI: Pediatric Asthma Treatment Using Painless Microneedle

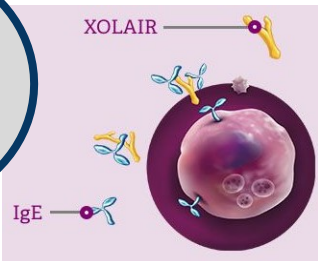
María Tueros Cabal, Veronica Miguel and Vinaya Basavarajappa

mit·linQ 

Affects
11% of the
children in
the world



50%
of the cases
of severe
asthma are
IgE-
mediated



PRESENT: INJECTIONS OF OMALIZUMAB



- **NEEDLE-PHOBIA**
- **HUMAN ERROR**
- **INFECTION**
- **DOSAGE ERROR**

*1-2 injections every 2-4 weeks

FUTURE: MICRONEEDLE PATCHES OF OMALIZUMAB

- **PAINLESS**
- **IMPROVED IMMUNE RESPONSE**
- **MINIMAL RISK OF BLEEDING AND INFECTIONS**
- **REDUCED DRUG DOSE AND TREATMENT PERIOD**



Task 1

Design, fabrication, and characterization of microneedle mold

Task 2

Fabrication and characterization of drug-filled microneedles

Task 3

Preclinical trial in mouse model

Team Members :

Vinaya Kumar K B



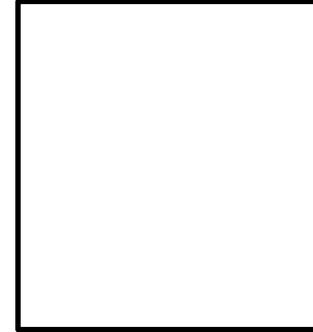
Staff researcher in the International Iberian Nanotechnology Laboratory (INL), Portugal. He has proven experience in the design and development of several Microelectromechanical systems (MEMS) devices including Microneedle array, microfluidic device and lab-on-chip Devices.

Verónica Miguel



Ph.D. student at the Center of Molecular Biology in Madrid (Spain). She has deep interdisciplinary training in molecular biology and cell biology techniques as well as the generation of *in vivo* mouse models, applied to the study of the chronic kidney disease.

Maria Turos



PhD student at University of Oviedo (Spain). Her work focuses on the discovery of therapeutic targets for cancer and testing newly synthesized drugs in different tumor cells.