

Reverse iontophoresis-enabled patches for non-invasive monitoring of interstitial fluid

Bergoi Ibarlucea

Bergoi.Ibarlucea@tecnalia.com



We want to be the technological partner of all companies to generate high impact business opportunities through technology.

1

Laboratory Services

2

R&D and Innovation Projects

3

Development of Investment Opportunities

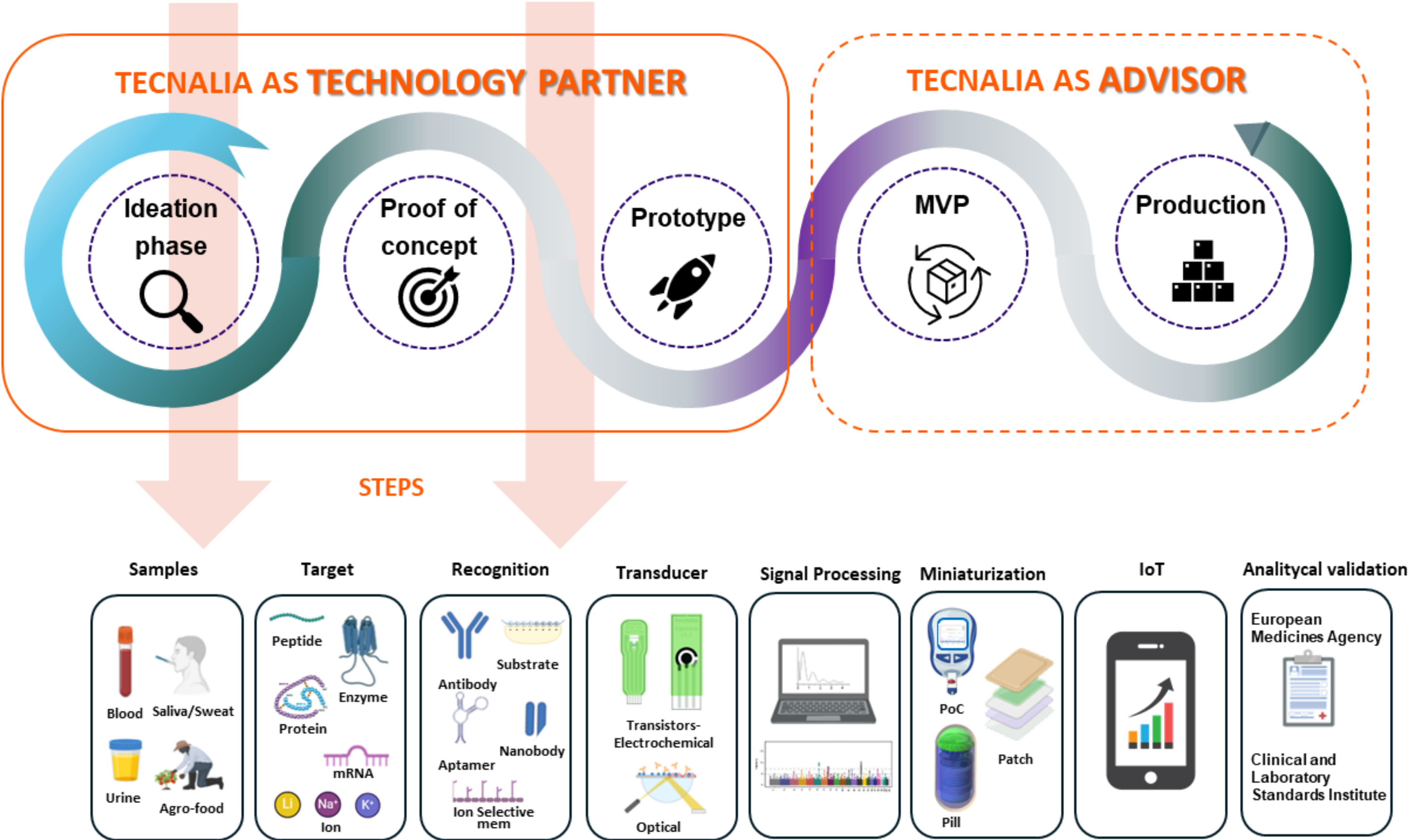
Our scopes of action are aligned with the **Sustainable Development Goals (SDG)**

Sustainable and healthy solutions for food, consumer, and health industry

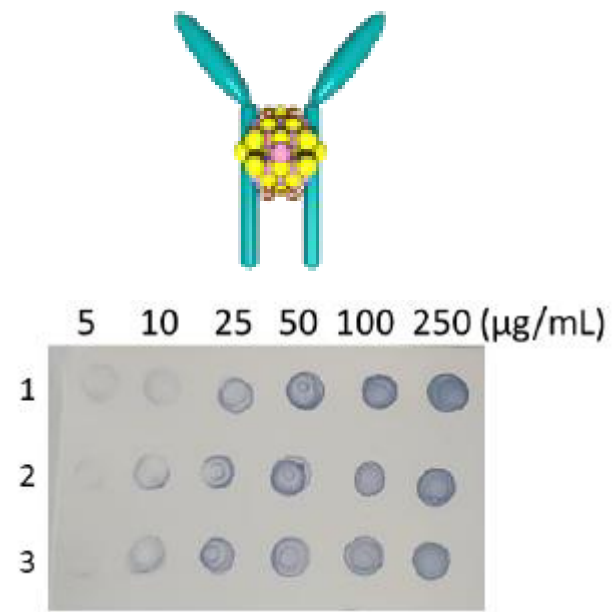
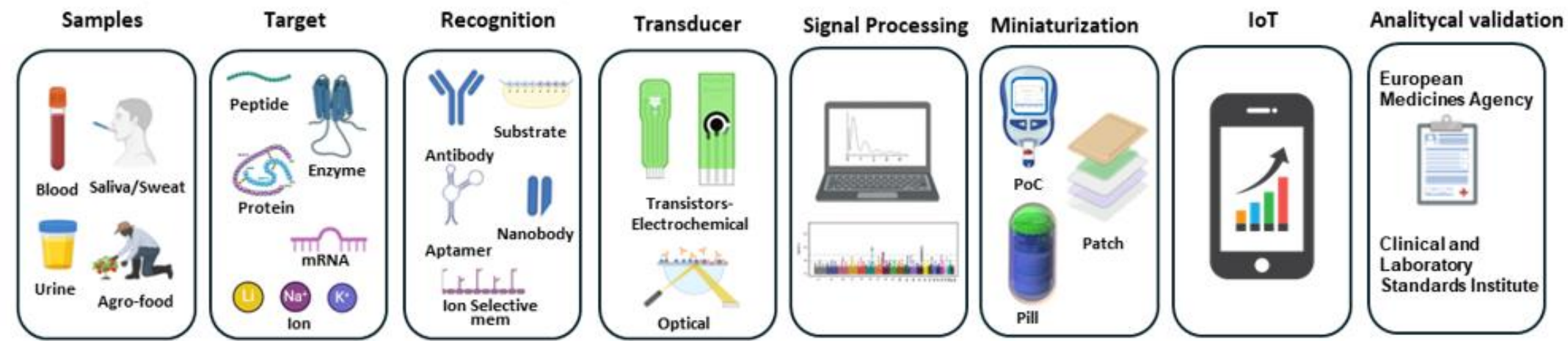
With a **multi-sectoral and multi-technological** perspective, we listen and work with companies to respond to the **major global challenges**.



Medical diagnostics: toward scalable and affordable sensing



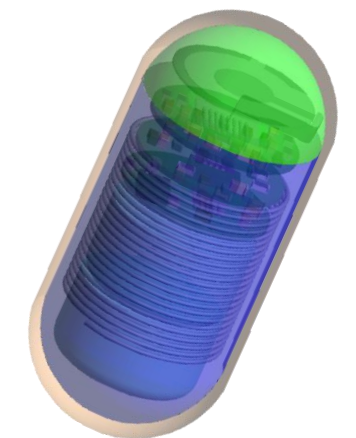
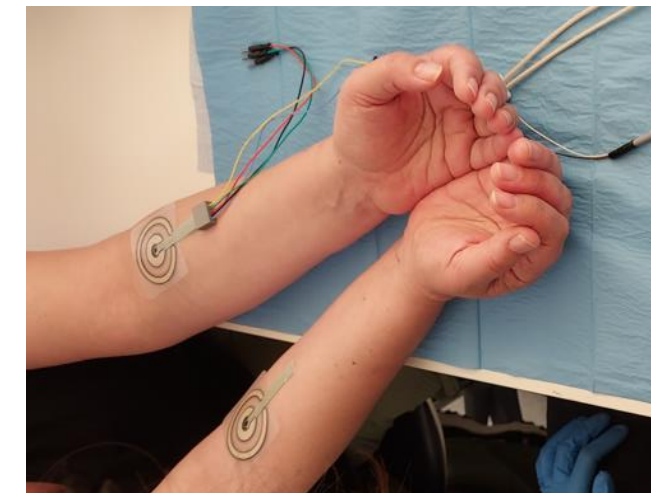
Medical diagnostics



Mora-Sanz et al., *Nanoscale Horiz.* 2025, 10, 1674-1683



In vitro ← → In vivo



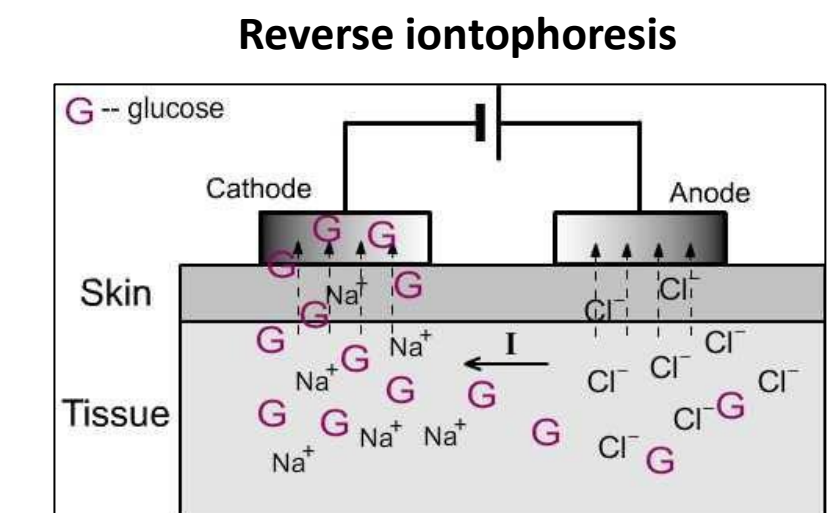
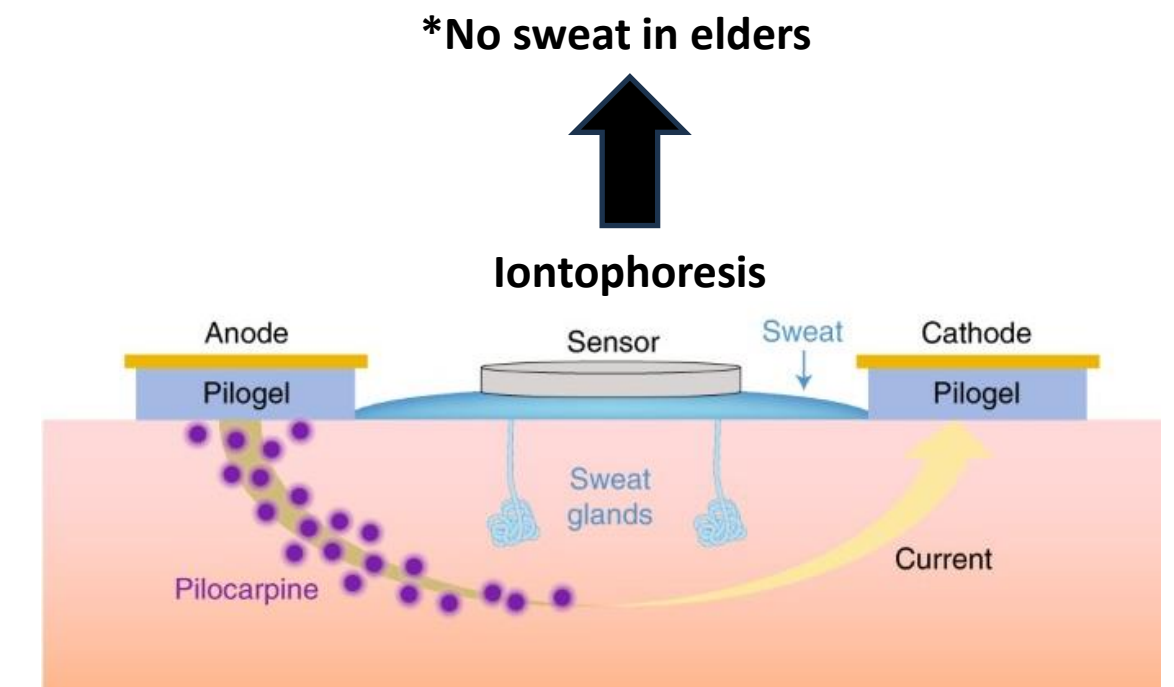
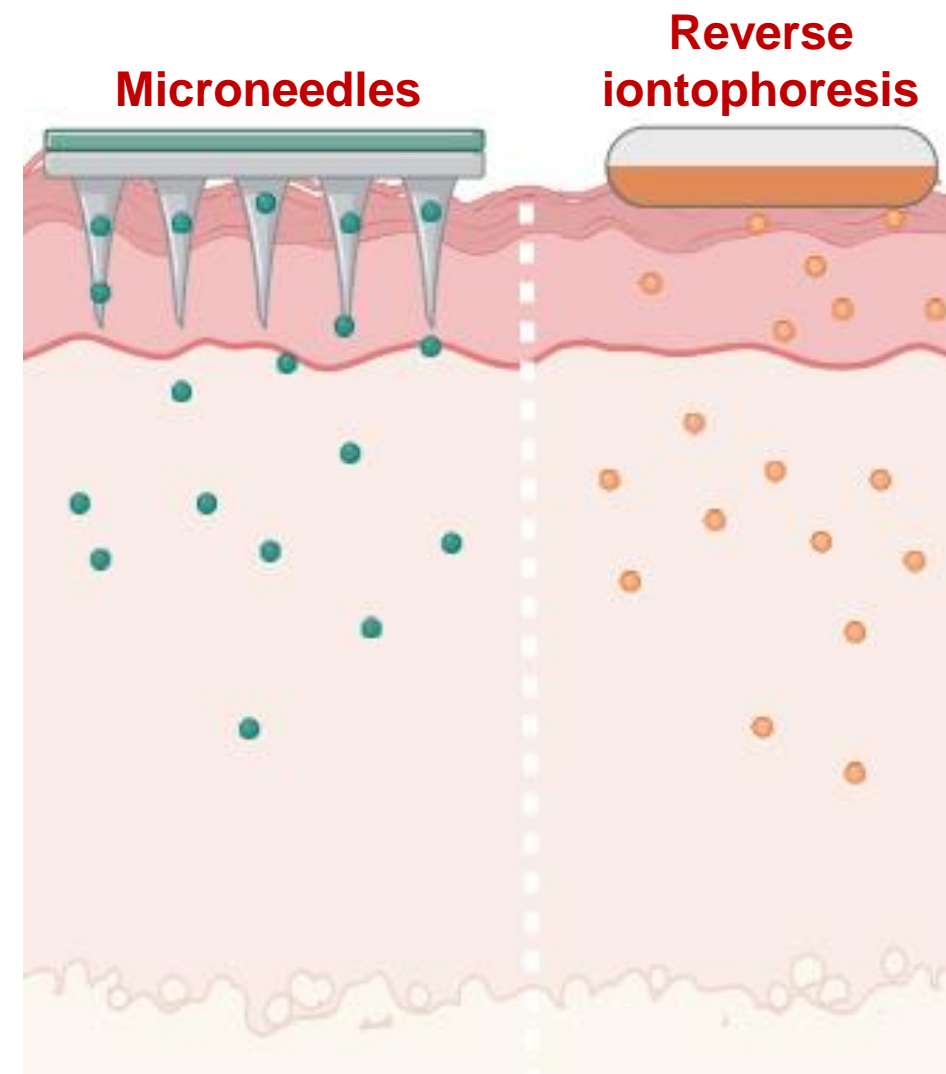
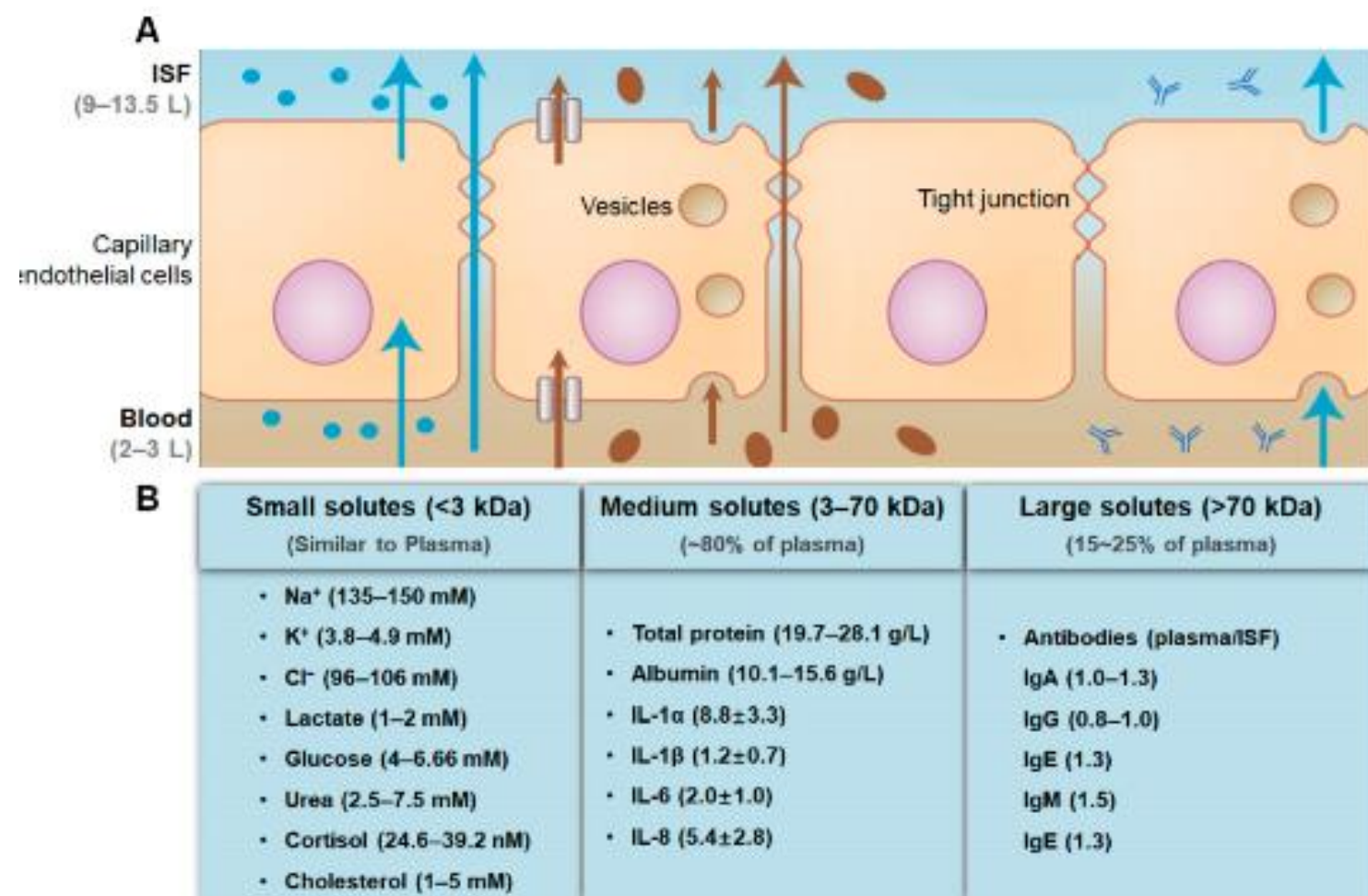
Patent application:
EP24382899.3 (2024)

Non-invasive analysis: external body fluids



Measurement of biomarkers in interstitial fluid

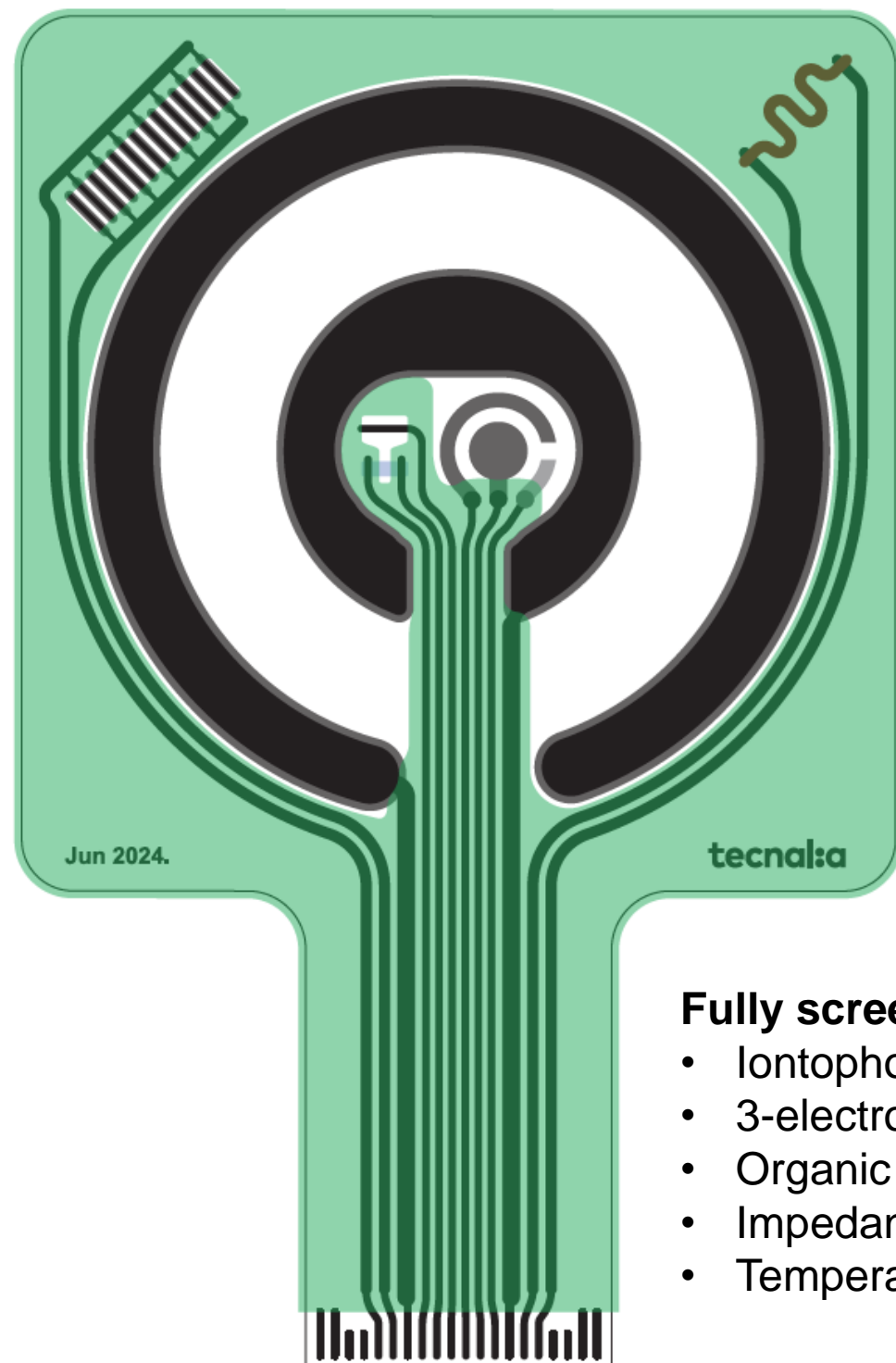
- Small ions and molecules in blood are also present in interstitial fluid at the same concentration



Electromigration/electroosmosis by reverse iontophoresis

Lab-on-a-patch

- Multimodal approach

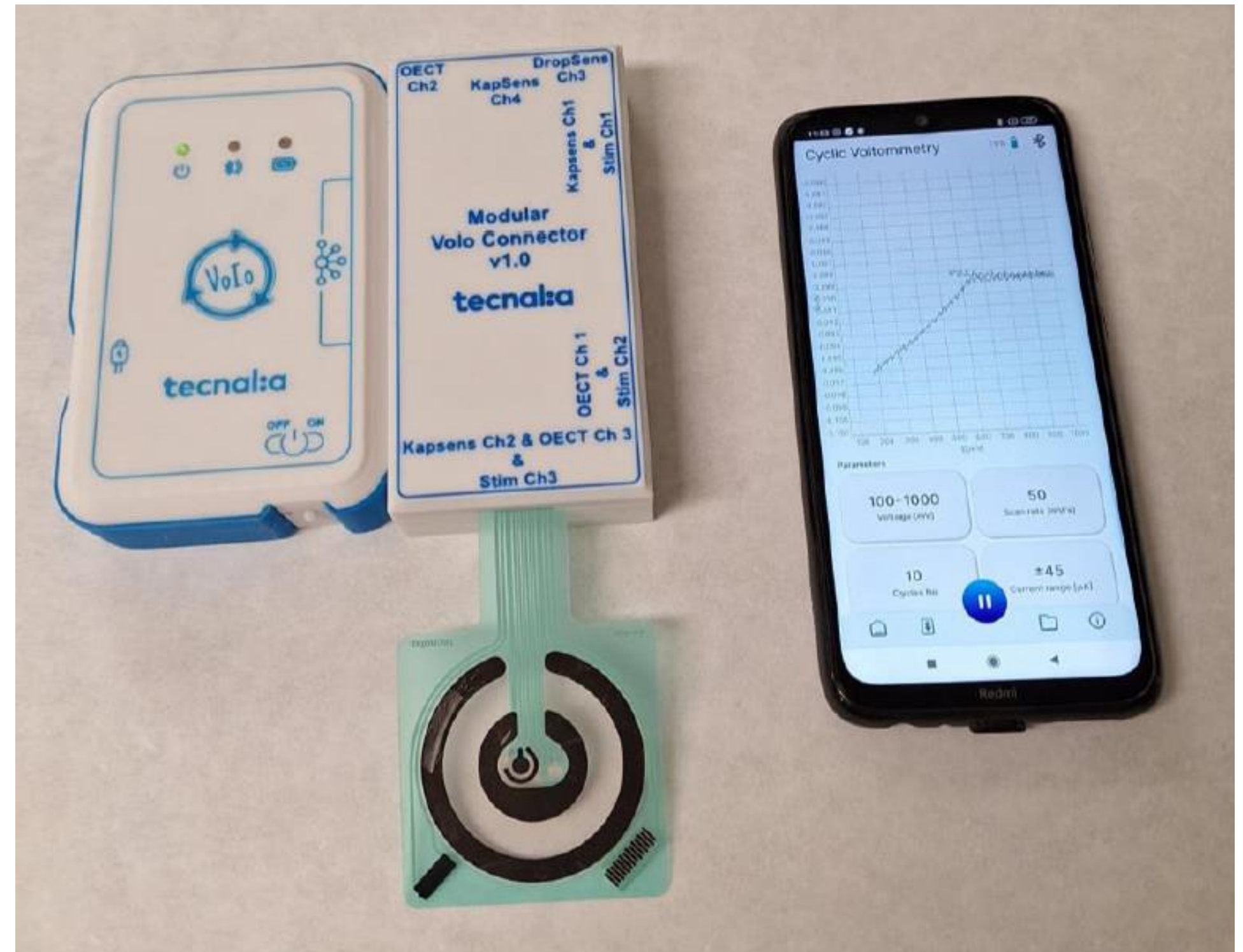


Fully screen printed multisensor patch

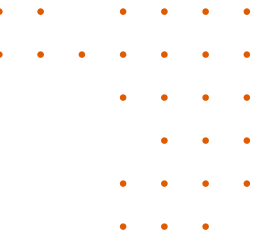
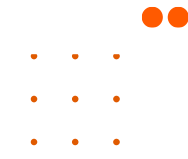
- Iontophoretic structures
- 3-electrode cell
- Organic electrochemical transistor
- Impedance sensor
- Temperature sensor

Patent application: P233295-EP (2024)

Bi-potentiostat with wireless communication with smartphone app



(Unpublished content)



tecnalia

MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

bergoi.ibarlucea@tecnalia.com

tecnalia.com



Elkartek Bg23, KK-2023-00009
Elkartek Itthaca, KK-2024/00028



This project is funded
by the European Union

6thSense Asset Valorisation Action (101159927)

