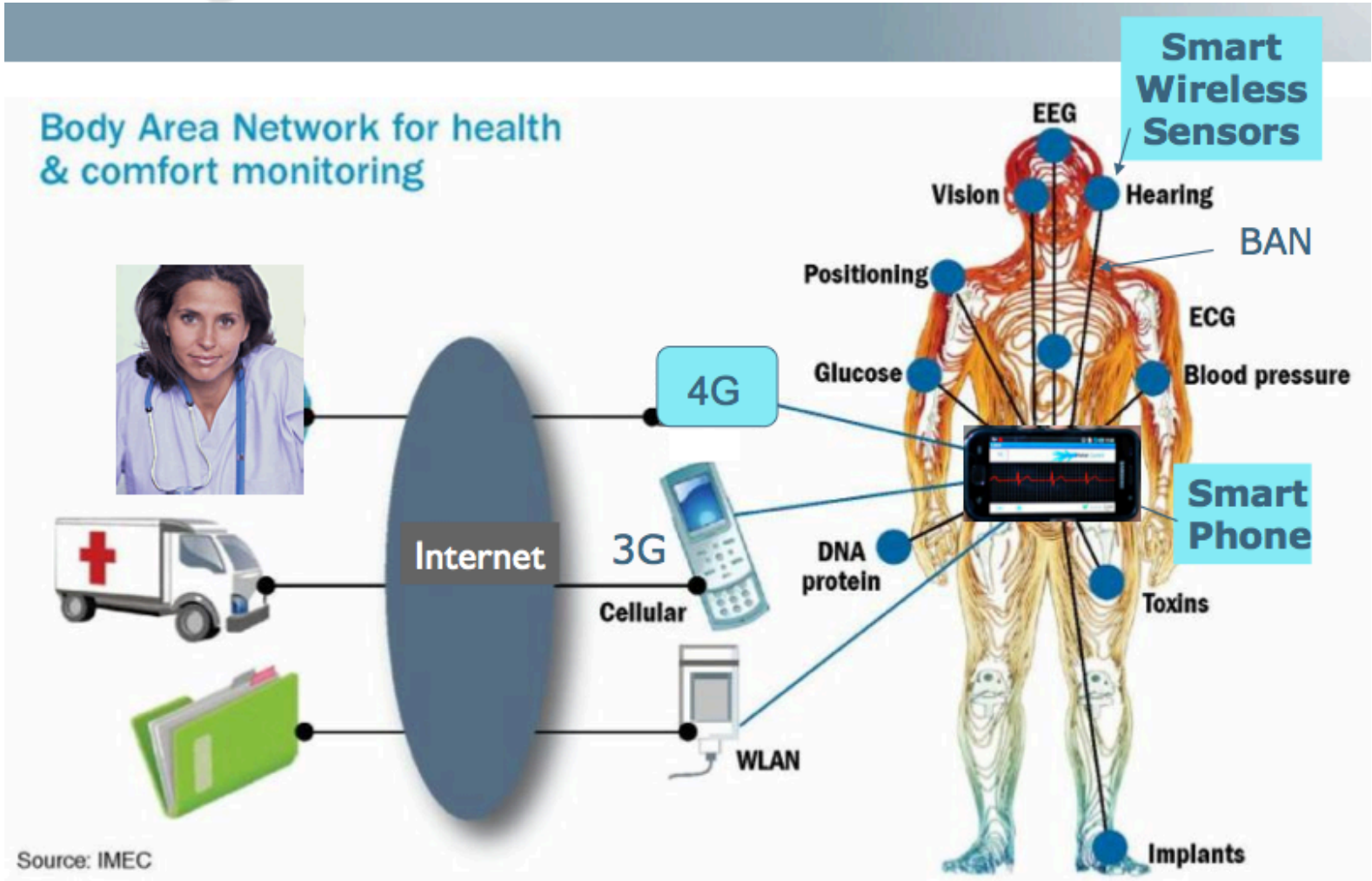
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

EDMI Microsystems and Microelectronics

MICRO-614: Electrochemical Nano-Bio-Sensing
and Bio/CMOS interfaces

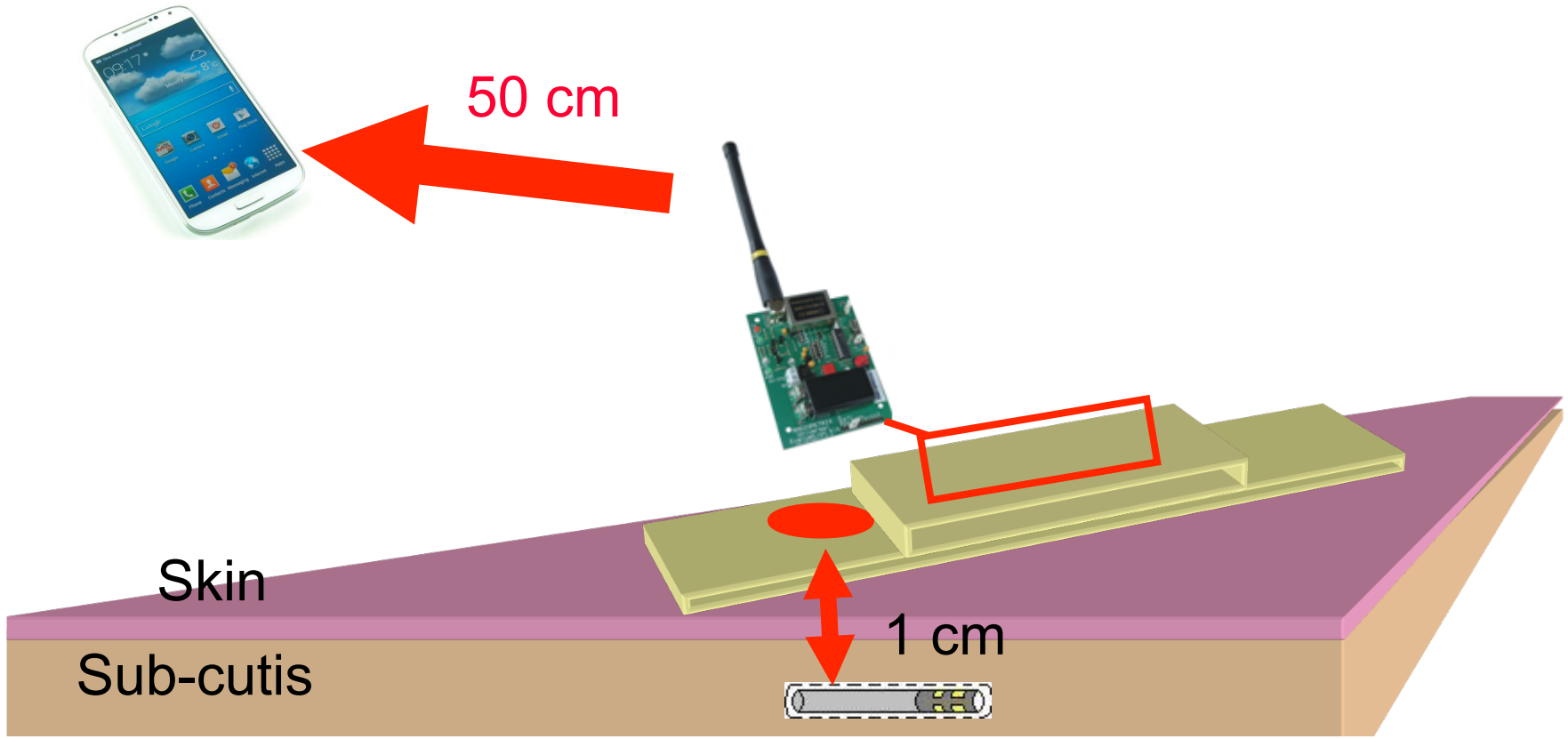
Lecture #14
APPENDIX on Biocompatibility
Circuits for metabolites detection with multi-panel systems

Fully Connected Human++



Courtesy, Hugo De Man

Under-the-Skin Device & Wearable Patch



An antenna very close to the chip is required for the remote powering

20 March 2013 Last updated at 01:49 GMT

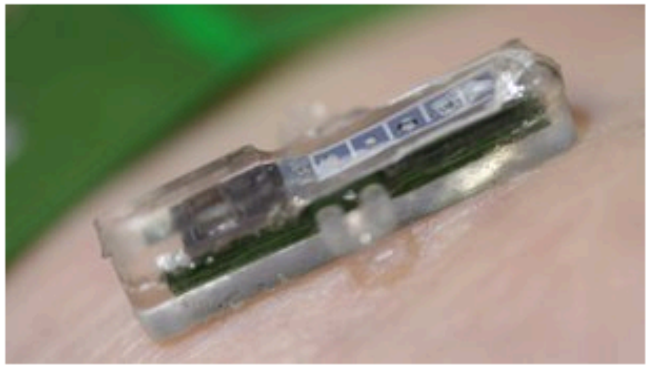
'Under the skin' blood-testing device developed

By Michelle Roberts
Health editor, BBC News online

Scientists say they have developed a tiny blood-testing device that sits under the skin and gives instant results via a mobile phone.

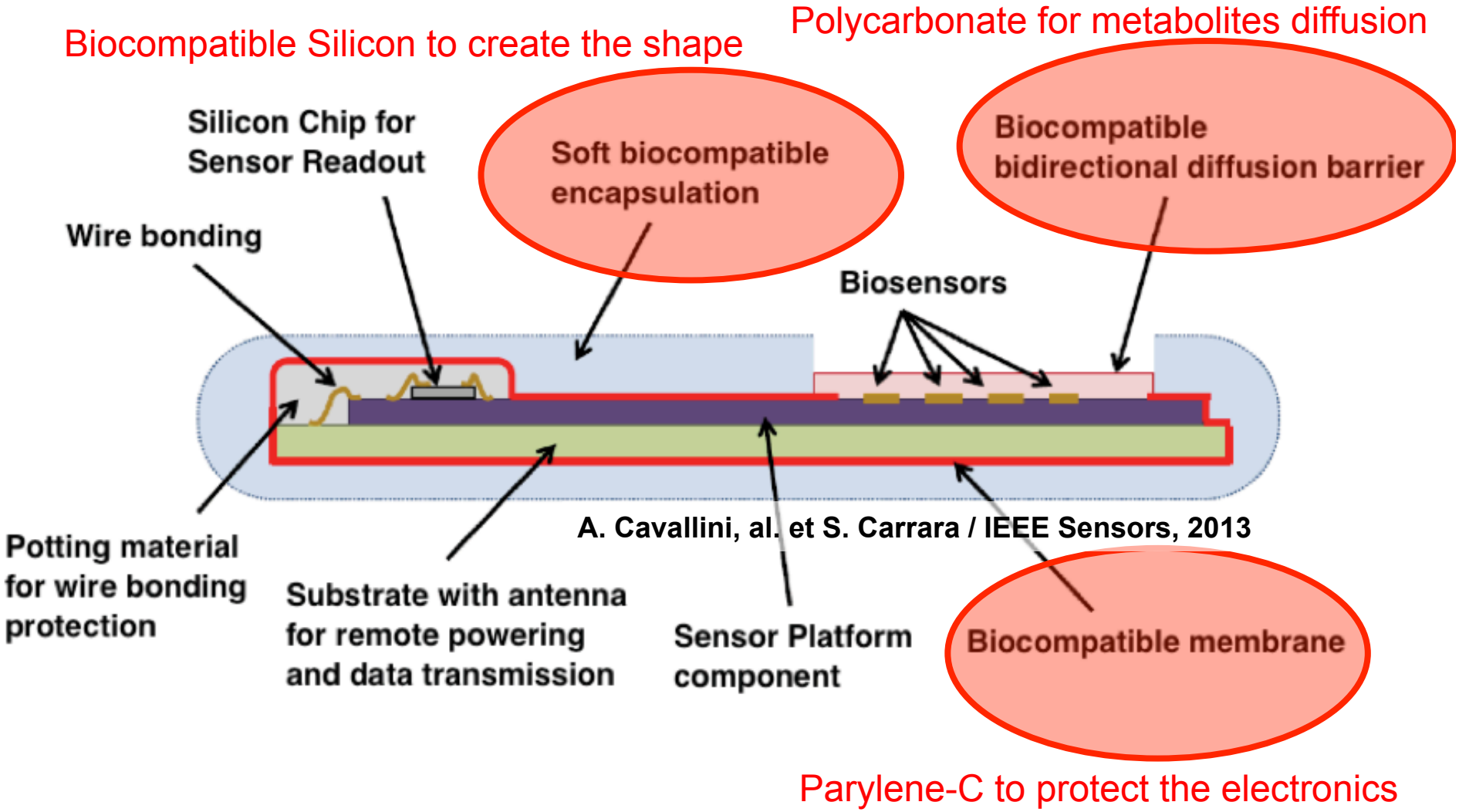
The Swiss team say the wireless prototype - half an inch (14mm) long - can simultaneously check for up to five different substances in the blood.

The data is sent to the doctor using radiowaves and Bluetooth technology.

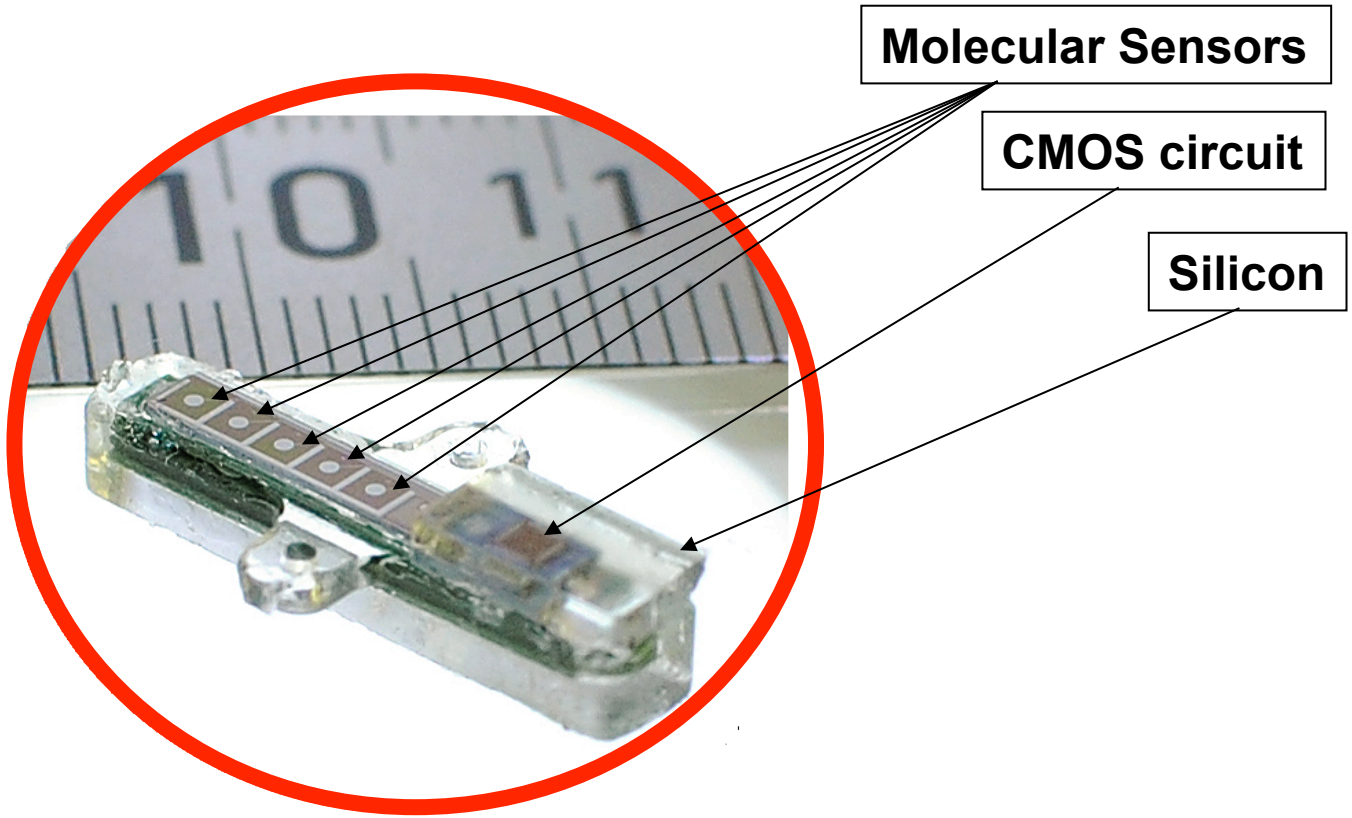


The device sits under the skin and takes multiple readings

Biocompatible Packaging

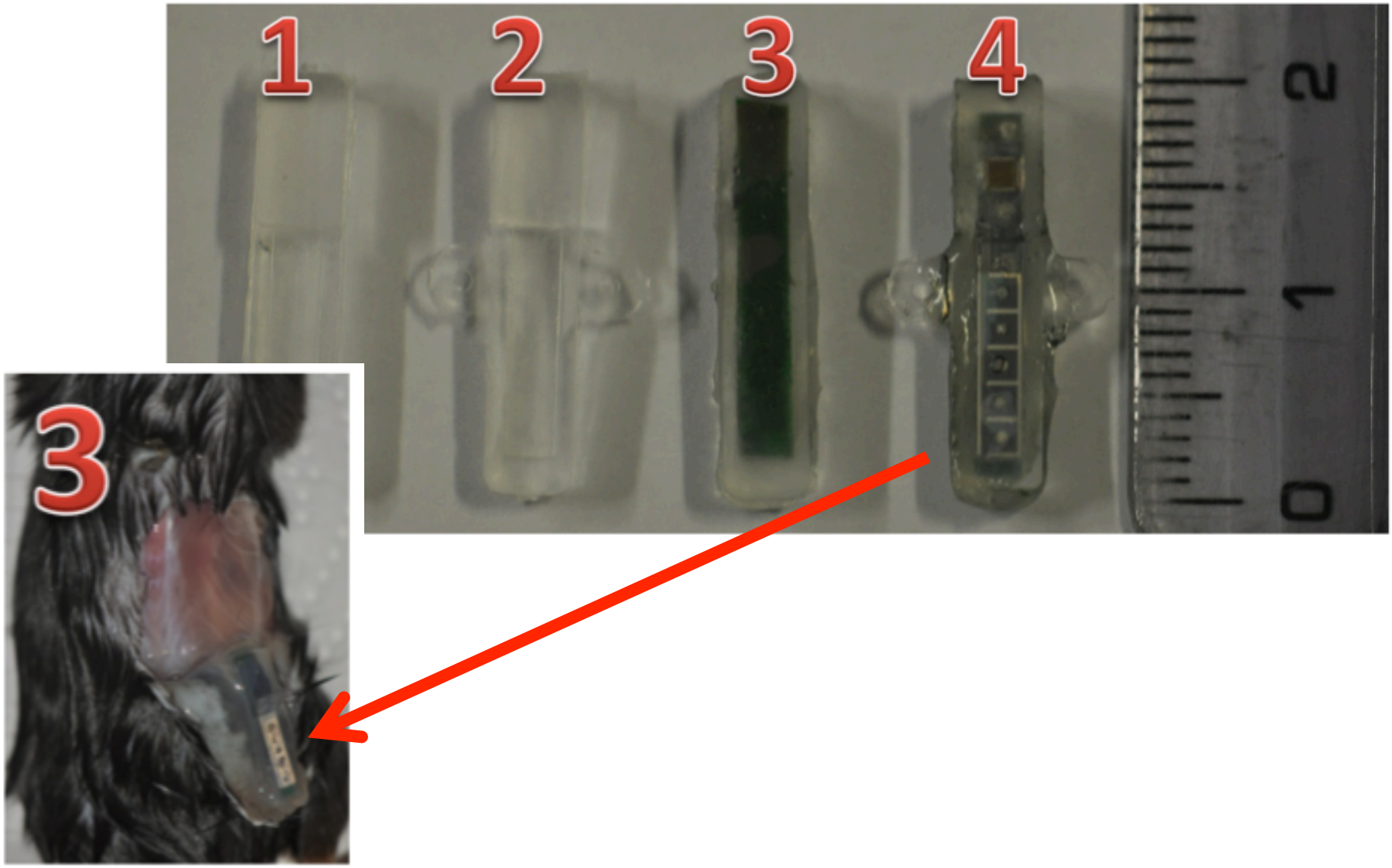


The Biocompatible Integration

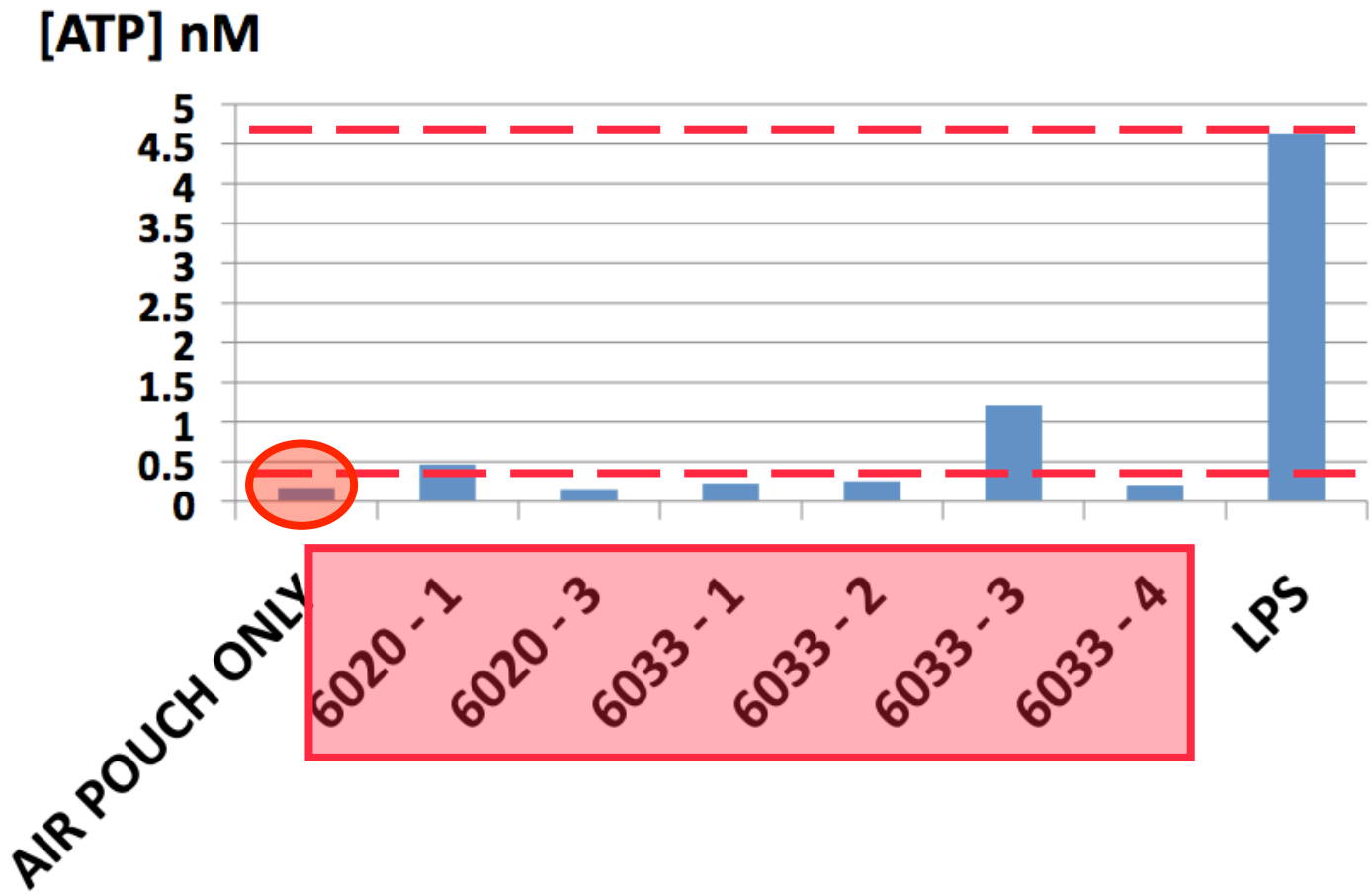


Already tested in animal models

Biocompatibility tests on mice



System Biocompatibility



Tests of inflammation induced in mouse by the implanted Bio-Nano-Sensor and the wear remote system