

# **DEVELOPMENT OF IMMUNOELECTROANALYSIS FOR DIFFERENTIAL STROKE DIAGNOSIS**

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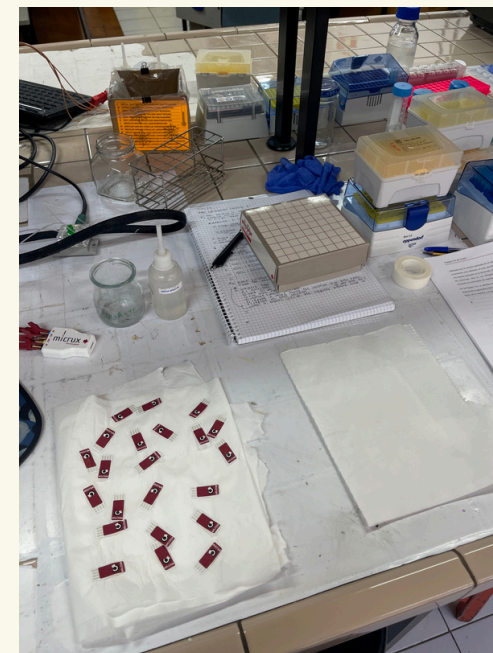
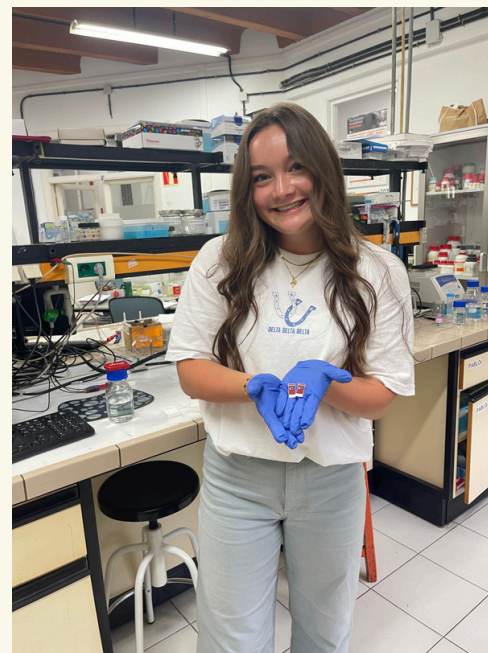
# INTERNSHIP DETAILS

Location: Oviedo, Spain

Organization: University of Oviedo

Supervisors: Dr. Maria Teresa

Fernandez-Abedul and Pablo Rioboo









# OVERALL PROJECT

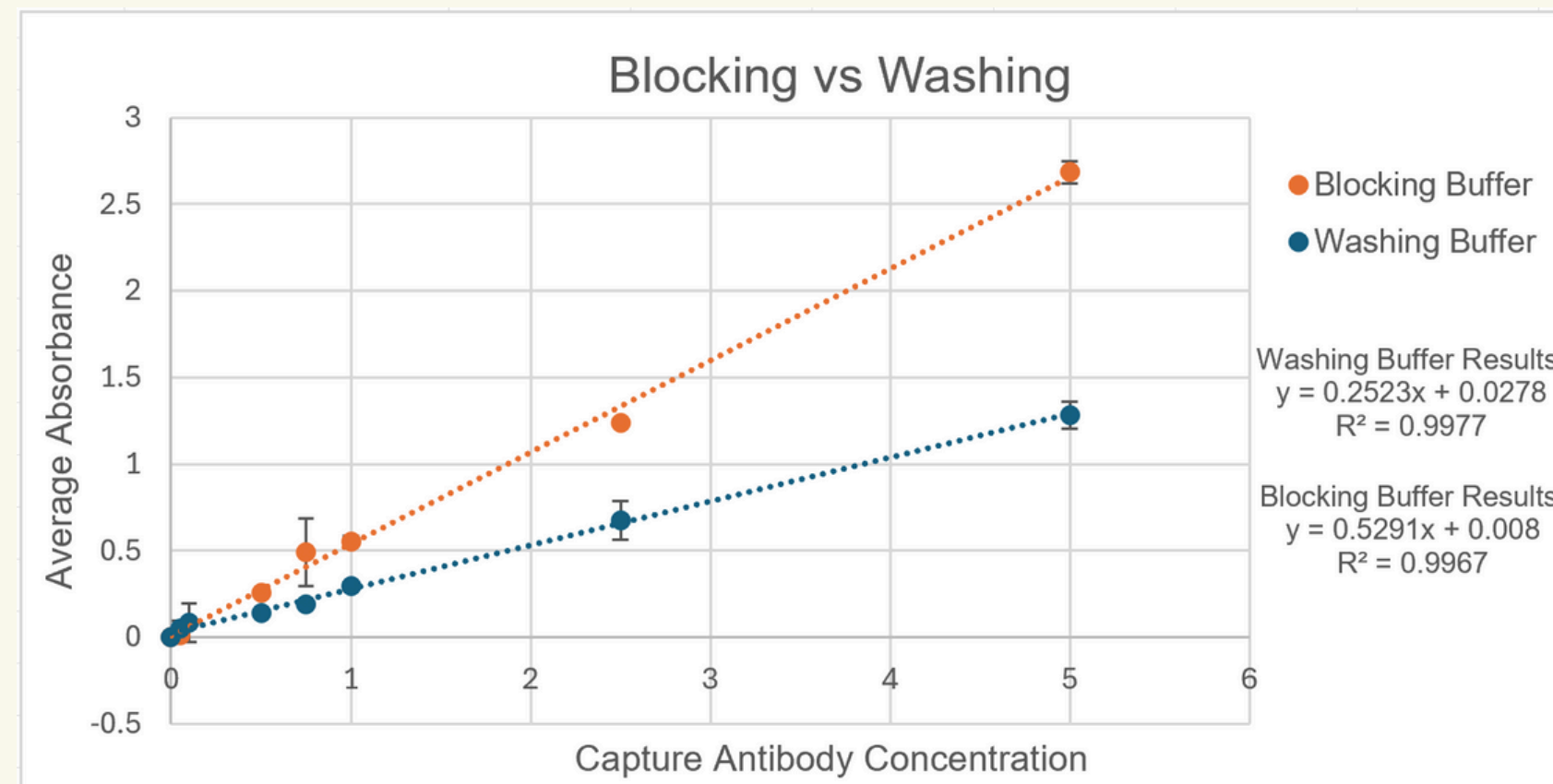
The development of a vertical flow electrochemical immunoassay for the determination of a protein biomarker for differential stroke diagnosis.

## PROJECT TASKS

1. ELISA optimization
2. Electrode testing
3. Vertical flow optimization

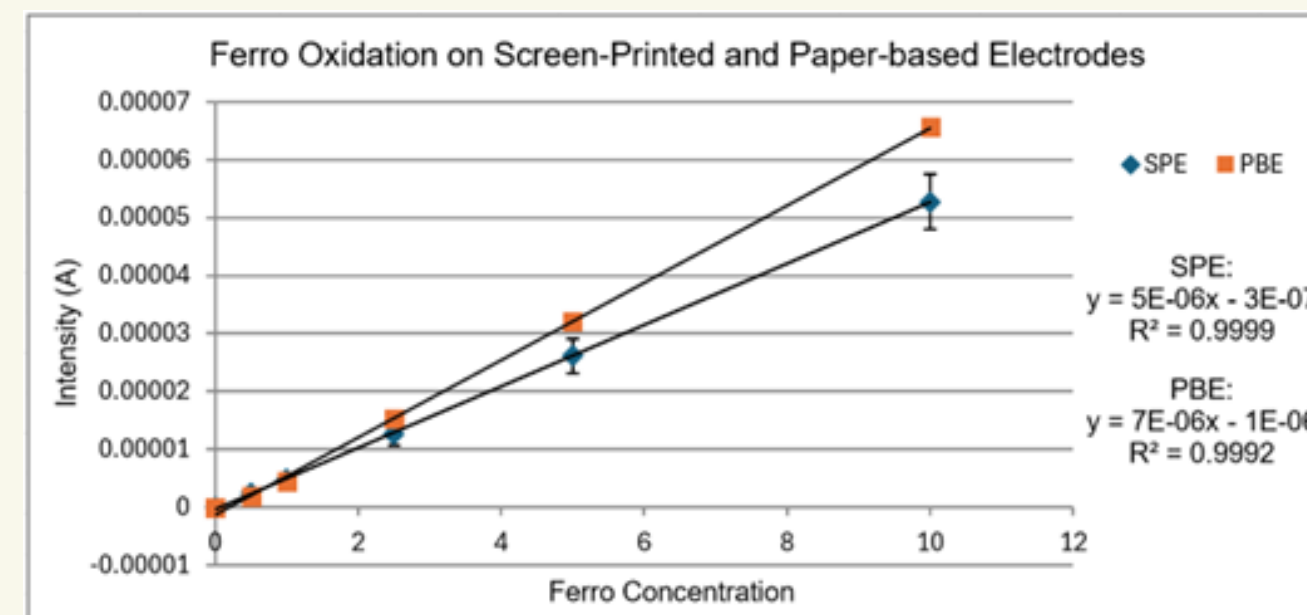
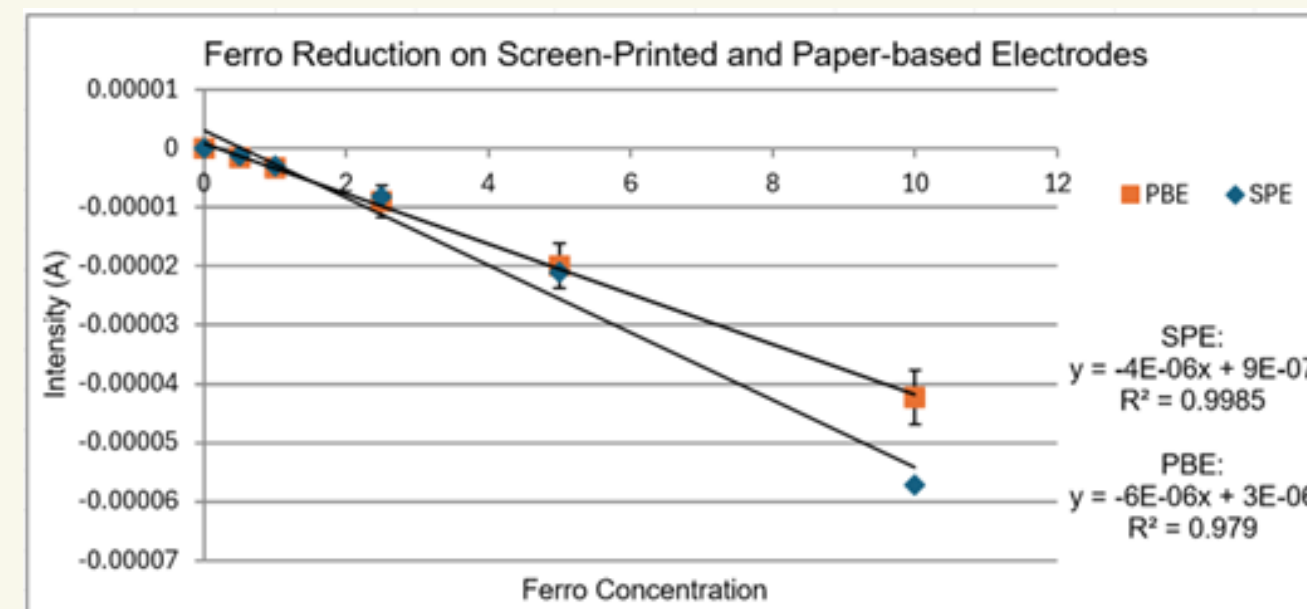
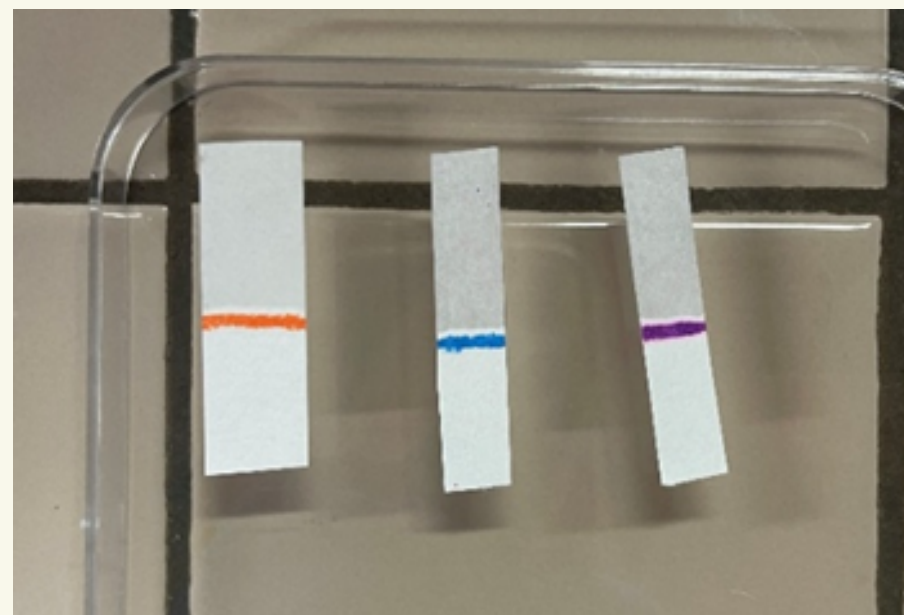
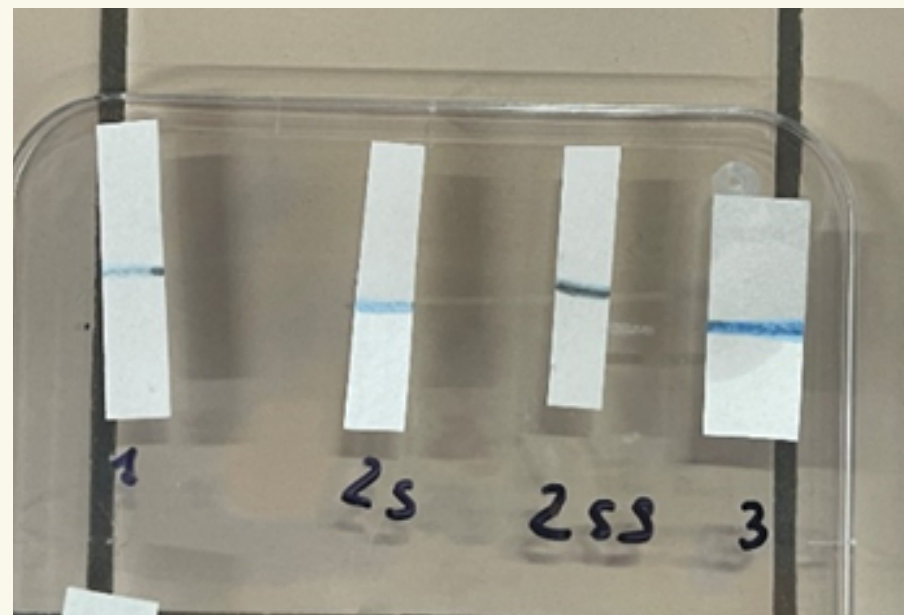
# 1) ELISA OPTIMIZATION

- a) ELISA #1: Blocking buffer composed of tween, PBS, and bovine serum albumin (BSA)
- b) ELISA #2: Blocking buffer composed of only tween and PBS (blocking buffer)



# 2) ELECTRODE TESTING

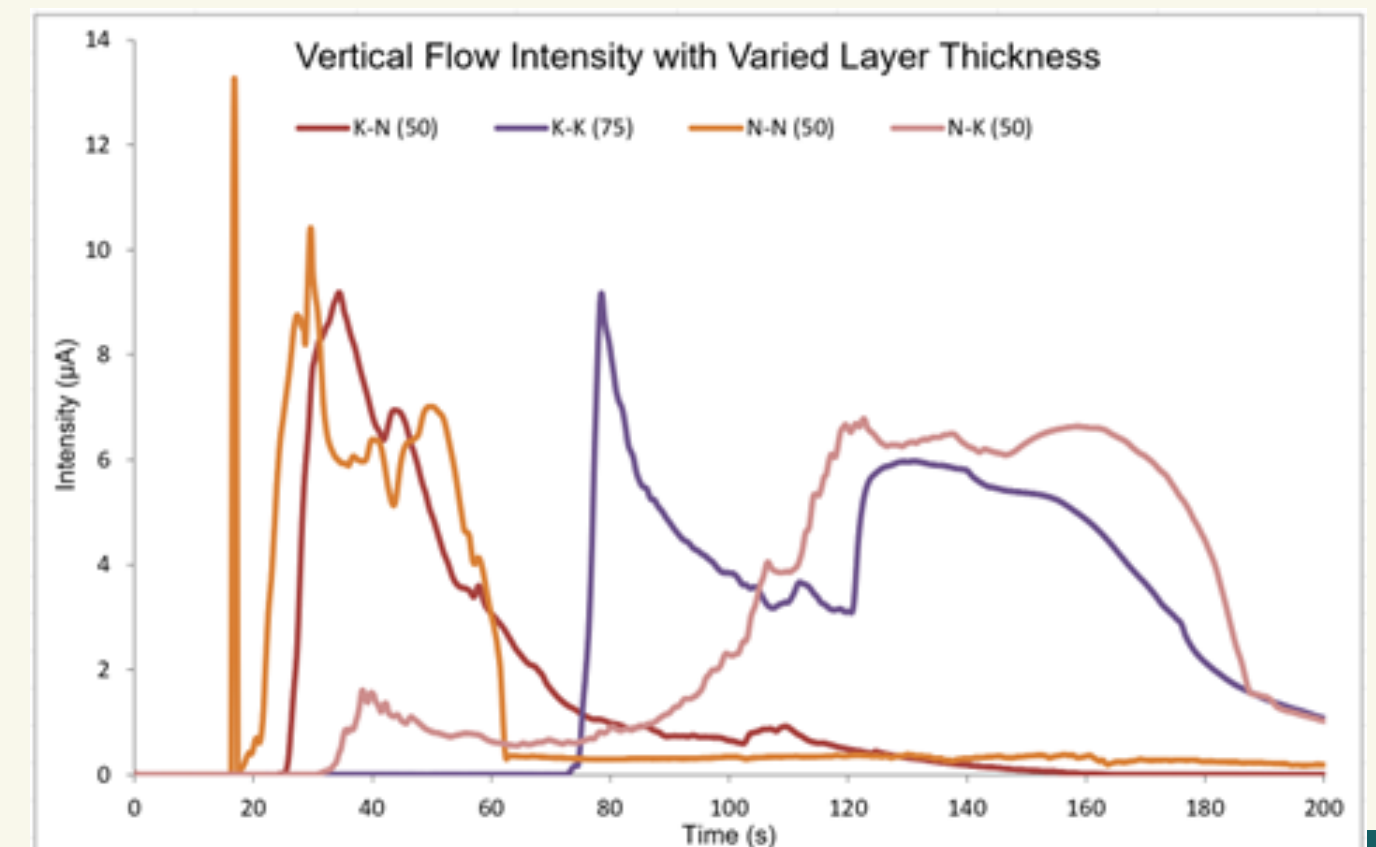
- a) Paper electrode flow tests to compare hydrophobic pens to wax crayons.
- b) Cyclic voltammetry testing on screen-printed and paper-based electrodes.



# 3) VERTICAL FLOW OPTIMIZATION

- a) Vertical flow layer optimization on screen printed electrodes
- b) Vertical flow optimization on paper-based electrodes

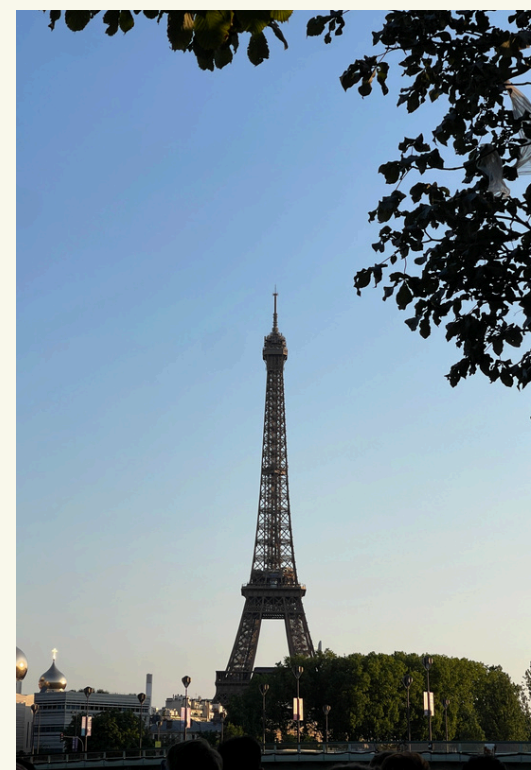
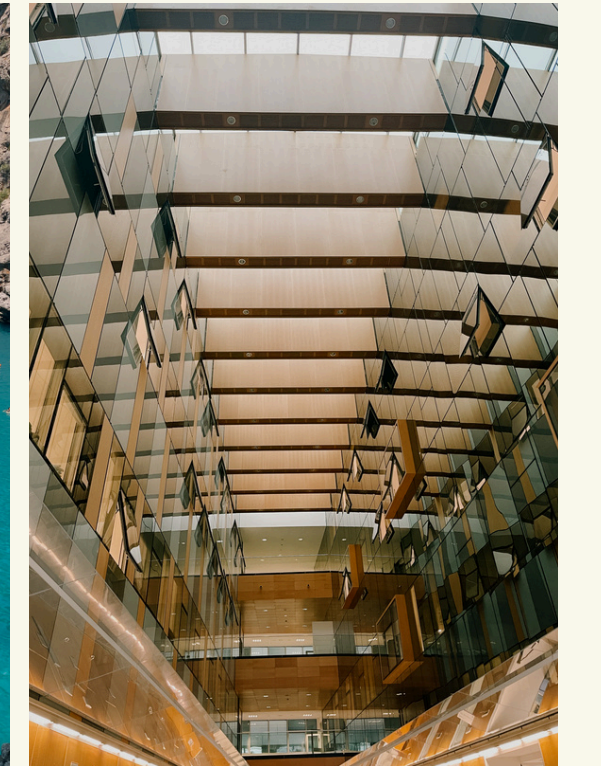
Sample Pad	Absorbent Pad	Volume ( $\mu\text{l}$ )
Thick	Thin	40
Thick	Thin	50
Thick	Thick	50
Thick	Thick	75
Thin	Thin	40
Thin	Thin	50
Thin	Thick	50





# PERSONAL EXPERIENCE

Key takeaways: travel, independence, taking risks, and new cultures!





# **QUESTION & ANSWER**





**THANK  
YOU**