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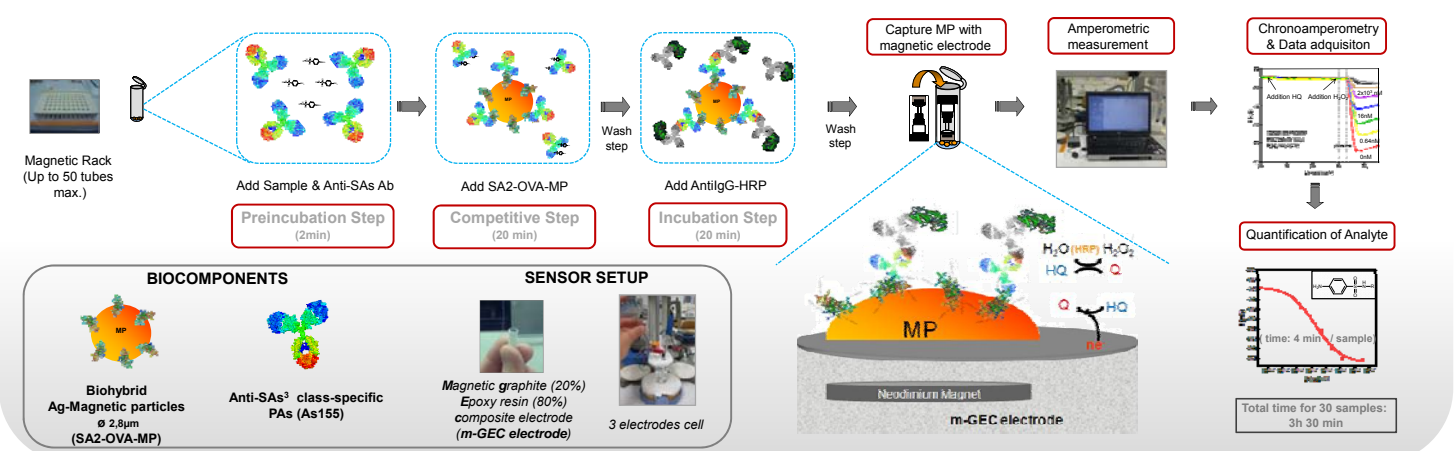
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## 1. Introduction

The purpose of this work has been to develop a working procedure for the analysis of **sulfonamide (SA) antibiotic residues** in **honey samples** using an **amperometric magneto immunosensor**. The amperometric magneto immunosensor has been applied before<sup>1</sup> to the analysis of these antibiotics in milk samples<sup>2</sup>. In this work, we have expanded the number of sulfonamide antibiotic congeners detected and evaluated their performance in **hydrolyzed honey**, more than 10 SAs are detected in the matrix below 25 µg Kg<sup>-1</sup>. Although maximum residue limits have not been established in the EU, countries such as Switzerland have established a tolerance limit of 50 µg Kg<sup>-1</sup>.

## 2. Electrochemical Magneto Immunosensor



## 3. Honey Treatment

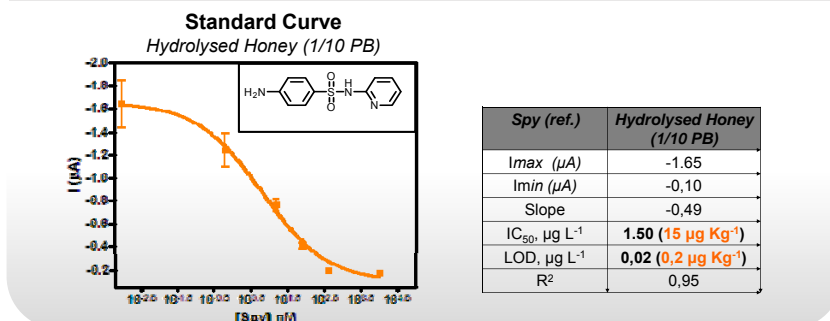
**Strong acid hydrolysis required<sup>d</sup>**

Sulfonamide conjugate to sugar + Sugar → Free sulfonamide

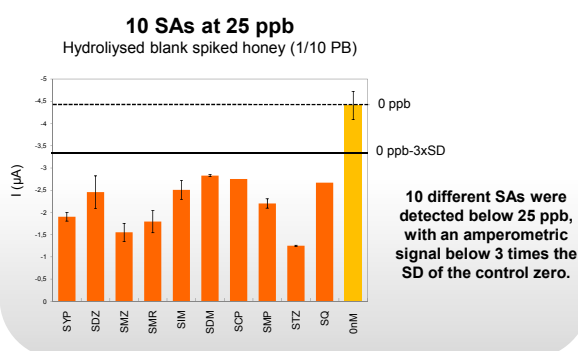
- Hydrolysis of SA conjugates**
  - ✓ 2N HCl for hydrolysis of sugar conjugates
- Conditioning**
  - ✓ 2N NaOH to neutralize (pH 7-8)
  - ✓ Buffering and dilution (10 times with PB)

(time 1h and 10min)

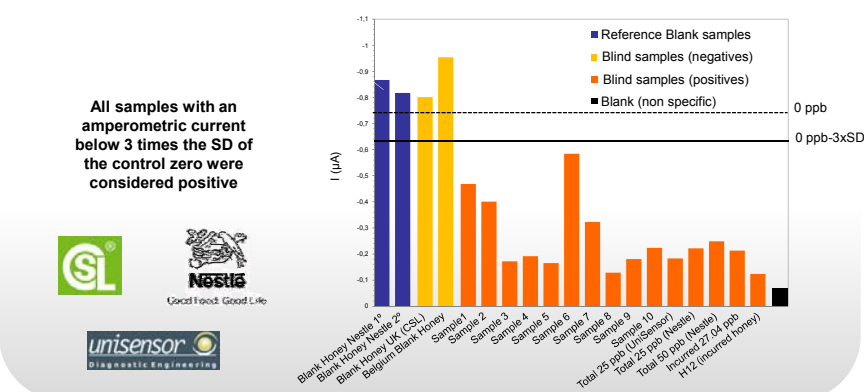
## 4. Immunosensor Features



## 5. Specificity Studies



## 6. Analysis of Blind Honey Samples



## 7. Conclusions

- A **simple, fast and inexpensive screening method** for sulfonamide antibiotic analysis in **honey** has been developed using an **amperometric magneto immunosensor**.
- The use of **magnetic microparticles** allows an efficient removal of matrix interferences and a simple assay procedure.
- The experiments performed in other laboratory have demonstrated that the **immunosensor** is **robust and portable**.

## Acknowledgements

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<sup>1</sup> Zacco, E., *Anal. Chem.* **2006**, *78*, 1780-1788.  
<sup>2</sup> Zacco, E., *Biosensors & Bioelectronics*, **2007**, *22*, 2184-2191.  
<sup>3</sup> Adrian, J., *J. Agric. Food Chem.* **2009**, *57*, 385-394.  
<sup>4</sup> B. Sheth, H., *J. Agric. Food Chem.* **1990**, *38*, 1125-1130.