

# Bifunctionalized gold nanoparticles for the colorimetric detection of the drug $\gamma$ -hydroxybutyric acid (GHB) in beverages

Silvia Rodríguez-Nuévalos, Ana M. Costero\*, Salvador Gil, Margarita Parra, Pablo Gaviña\*

## Content

<b>NMR Spectra</b> .....	2
Figure S1. $^1\text{H}$ NMR spectrum of <b>L1</b> .....	2
Figure S2. $^{13}\text{C}$ NMR spectrum of <b>L1</b> .....	2
Figure S3. $^1\text{H}$ NMR spectrum of <b>L2</b> .....	3
Figure S4. $^{13}\text{C}$ NMR spectrum of <b>L2</b> .....	3
<b>Mass Spectrometry Spectra</b> .....	4
Figure S5. Mass Spectrometry Spectrum of <b>L1</b> .....	4
Figure S6. Mass Spectrometry Spectrum of <b>L2</b> .....	4
<b>GNP1 Characterization</b> .....	5
Figure S7. <b>GNP1</b> DLS size distribution .....	5
Figure S8. <b>GNP1</b> stability in different buffers .....	5
<b>UV-Vis Spectra</b> .....	6
Figure S9. UV-visible changes of sensor <b>GNP1</b> with 35 mM GHB and a 35 mM mixture of AcONa/EtOH using water deionised as solvent. ....	6
Figure S10. Absorbance spectra of <b>GNP1</b> in the presence of citric acid, sodium ascorbate, in the real concentration present in beverages, and NaGHB (35 mM). ....	6
<b>Real samples</b> .....	7
Figure S11. Colour changes in real samples .....	7
Figure S12. Instructions sheet for an on-site safety kit based on GHB detection.....	7

## NMR Spectra

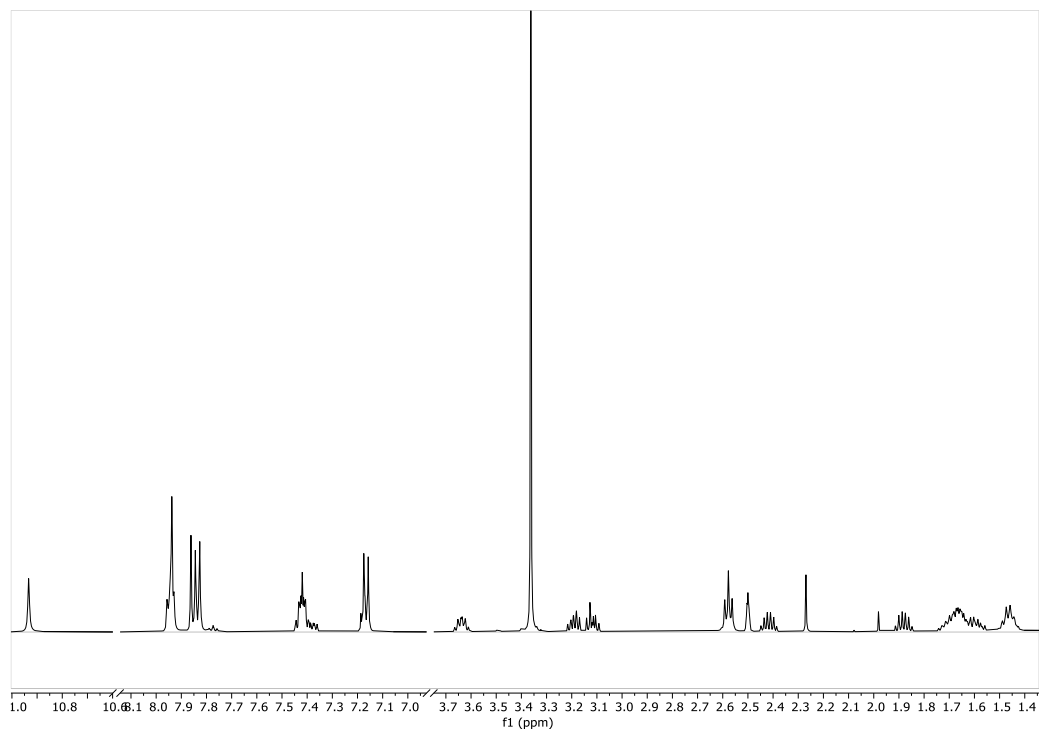


Figure S1.  $^1\text{H}$  NMR spectrum of L1

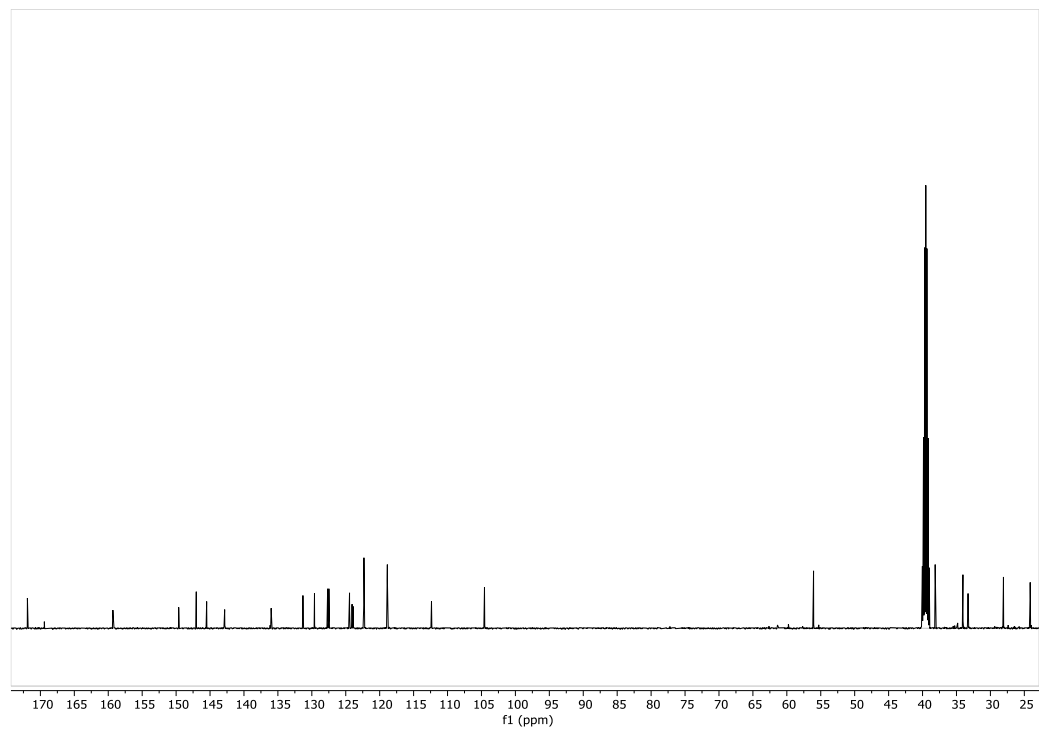


Figure S2.  $^{13}\text{C}$  NMR spectrum of L1

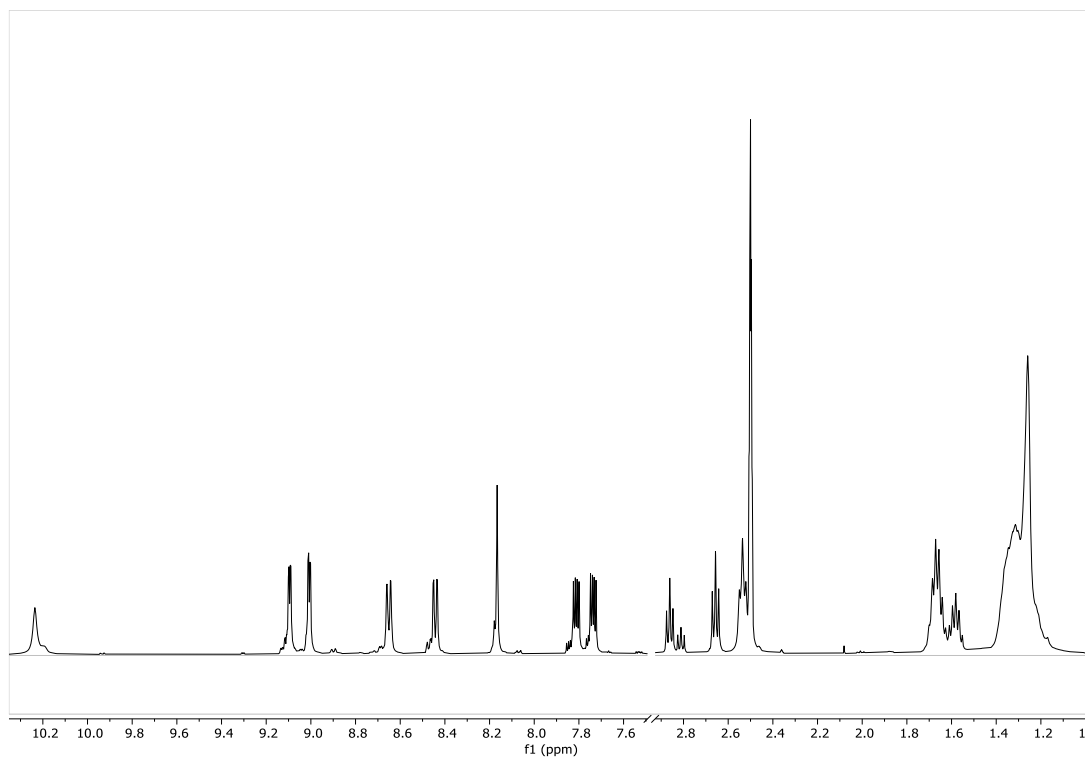


Figure S3.  $^1\text{H}$  NMR spectrum of L2

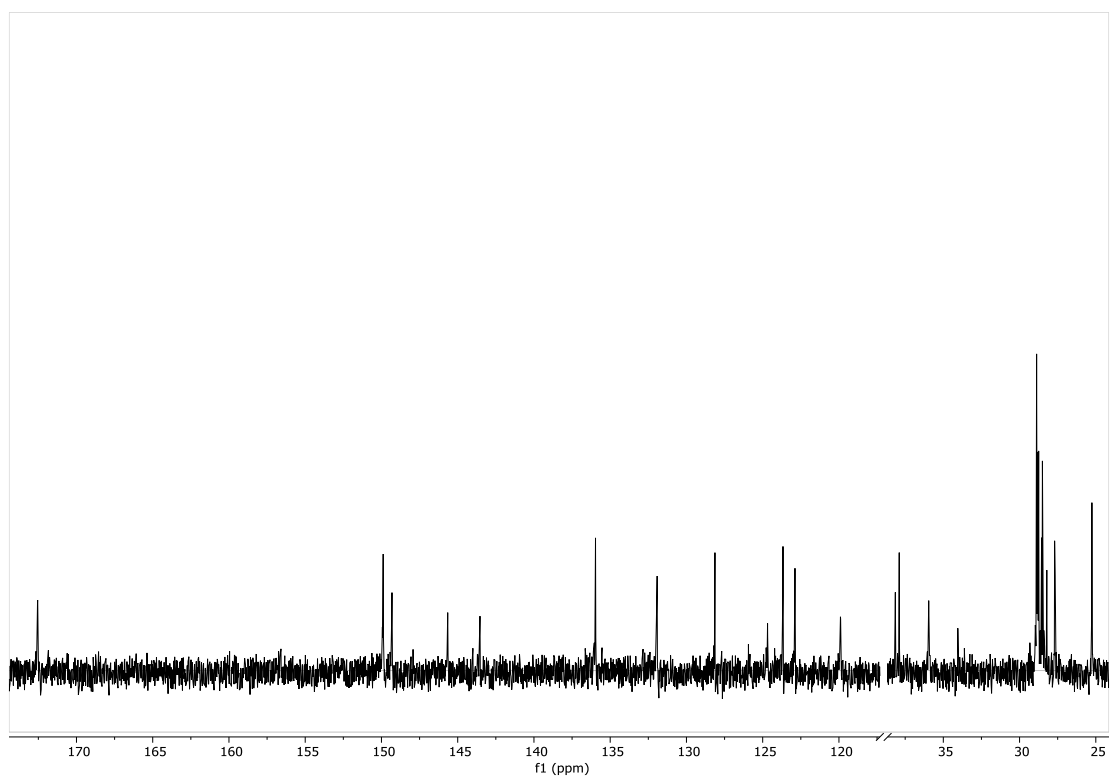


Figure S4.  $^{13}\text{C}$  NMR spectrum of L2

## Mass Spectrometry Spectra

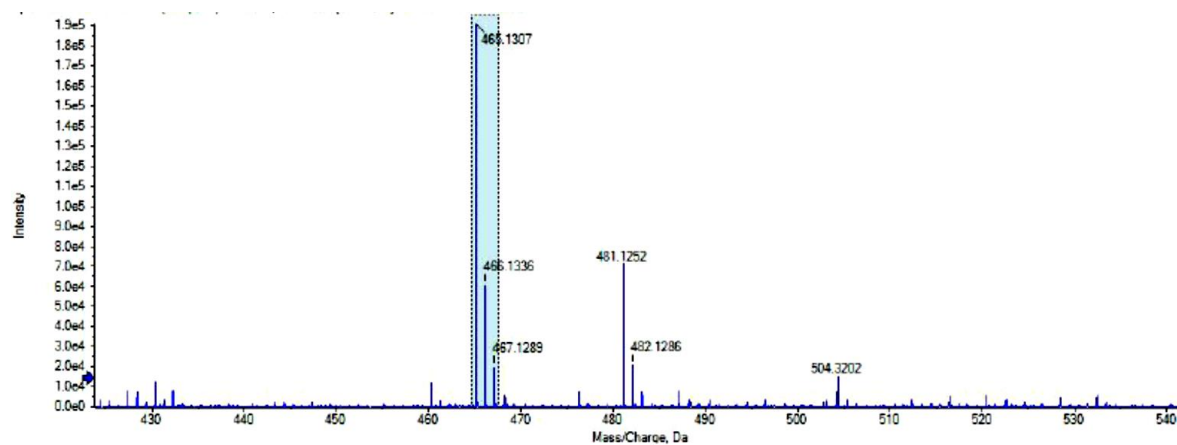


Figure S5. Mass Spectrometry Spectrum of L1

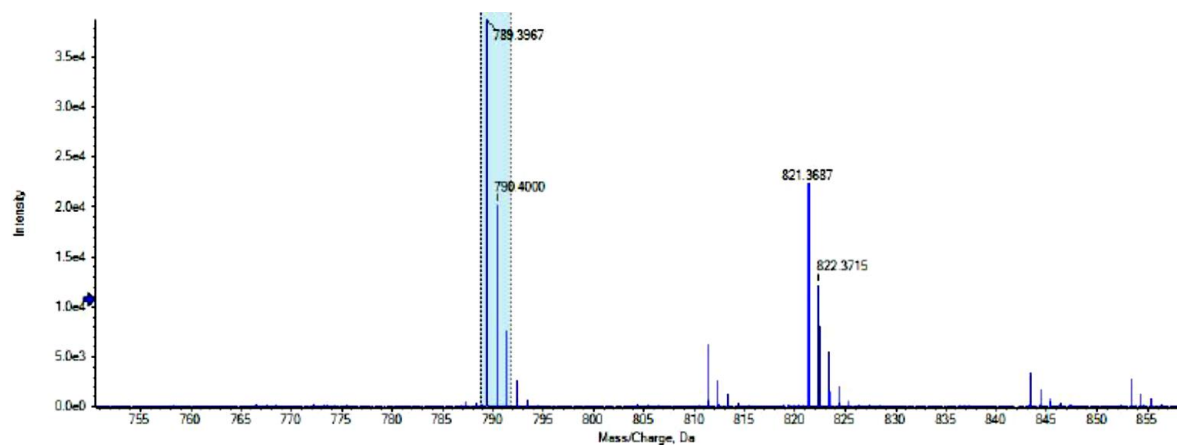


Figure S6. Mass Spectrometry Spectrum of L2

## GNP1 Characterization

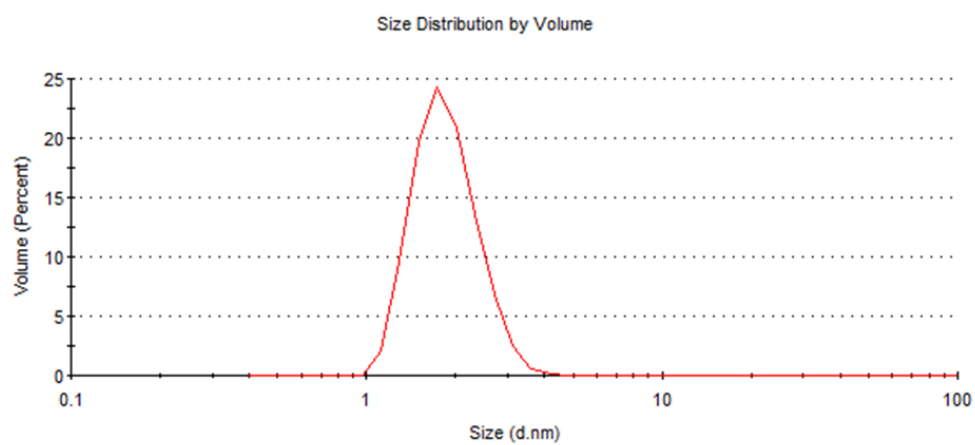


Figure S7. **GNP1** DLS size distribution



Water



Buffer pH 6.5



Buffer pH 7.5



Buffer pH 8.5

Figure S8. **GNP1** stability in different buffers

## UV-Vis Spectra

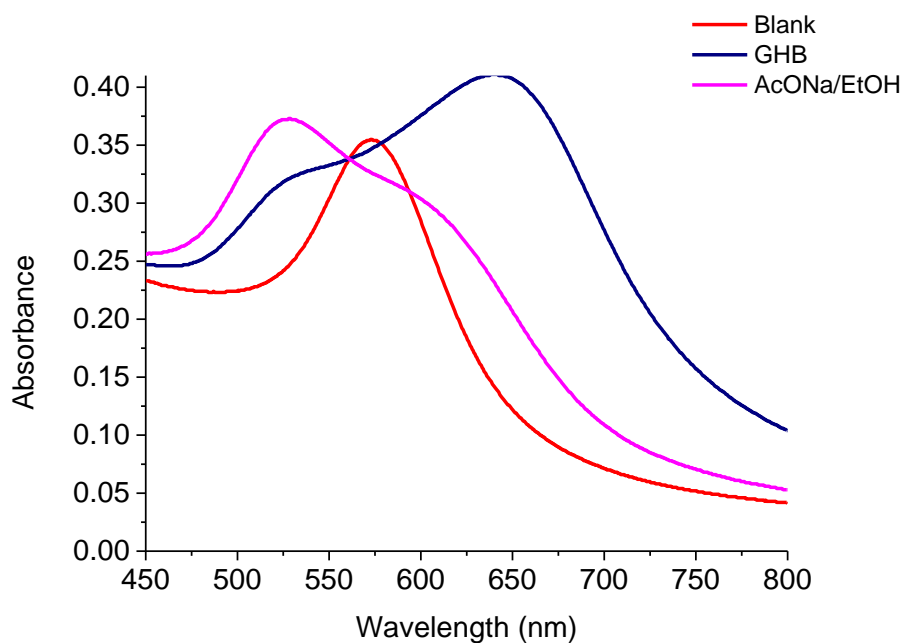


Figure S9. UV-visible changes of sensor **GNP1** with 35 mM GHB and a 35 mM mixture of AcONa/EtOH using water deionised as solvent.

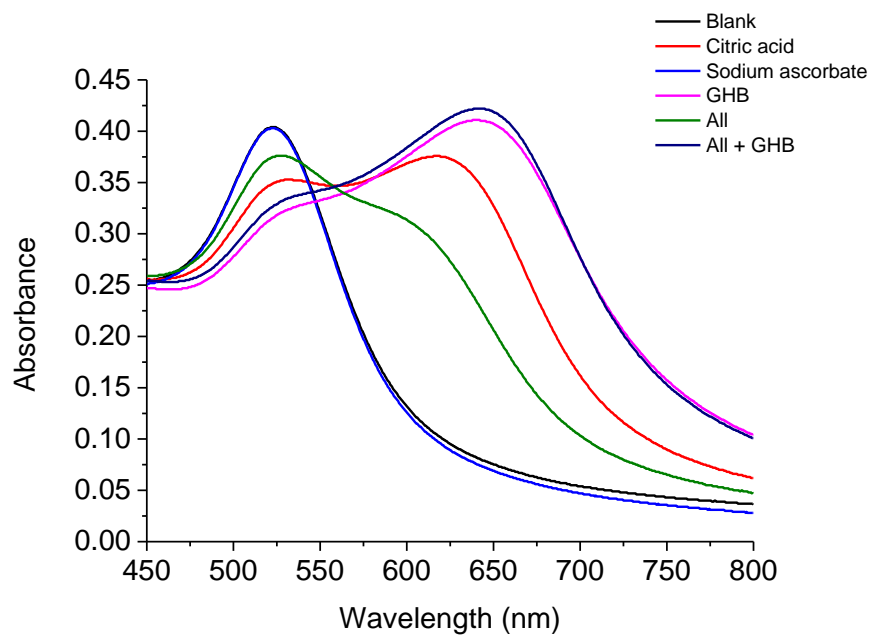


Figure S10. Absorbance spectra of **GNP1** in the presence of citric acid, sodium ascorbate, in the real concentration present in beverages, and NaGHB (35 mM).

## Real samples



Figure S11. Colour changes in real samples

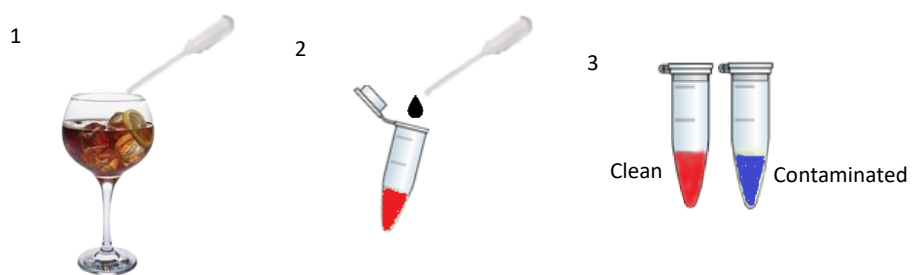


Figure S12. Instructions sheet for an on-site safety kit based on GHB detection