

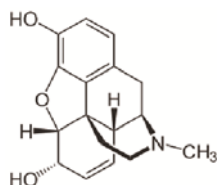
## Determination of morphine at gold nanoparticles/Nafion® carbon paste modified sensor electrode

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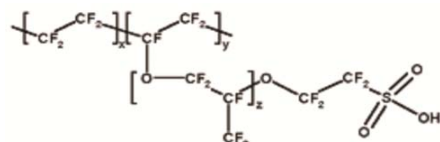
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### Supplementary Information

**Fig. S1** Structure of morphine



**Fig. S2** Structure of Nafion



**Table S1** Table of Robustness

Parameters	Modification	Recovery %
<b>pH</b>	6.7	98.9
	7	100.6
	7.4	100.1
	8	97.4
<b>Scan rate (mV)</b>	80	98.2
	90	99.8
	100	100.3
	110	101.2
<b>Lab. Temperature (°C)</b>	20	100.4
	25	99.6
	30	100.5

**Table S2** Table of comparison in real samples and references

Method	Real sample	RSD %	References
Spectrophotometric	urine	0.26 -1.06	[1]
Flow injection system	urine	2.2	[2]
Biosensor-based immunoassay	urine	0.48-18.38	[3]
Anodic adsorptive stripping differential pulse voltammetry	plasma	0.81-3.79	[4]
Capillary electrophoretic method	urine	1.7-5	[5]
Differential pulse voltammetry	urine	0.14-0.93	This work

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