**Supplementary Material**

# Innovative Localized Surface Plasmon Resonance Sensing Technique for a Green Spectrofluorimetric Assay of Ketoprofen, Paracetamol and Chlorzoxazone in Pharmaceutical Preparations and Biological Fluids

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**Figure S1:** Fluorescence spectra of 2 µg/mL CLX in ethanol, a is excitation spectrum and a* is emission spectrum.

**Figure S2:** Influence of pH on the ΔF using 3 µg/mL of the studied drugs and 1 ml of Britton Robinson buffer pH (3-10).

**Figure S3:** Effect of contact time between silver NPs and 3 µg/mL of eah drug from starting to 30 min.

**Table S1:** Linearity range comparison of fluorometric methods for the determination of KPN.

**Table S2:** Assay results for determination of the raw materials of KPN, PAR and CLX by the proposed method.

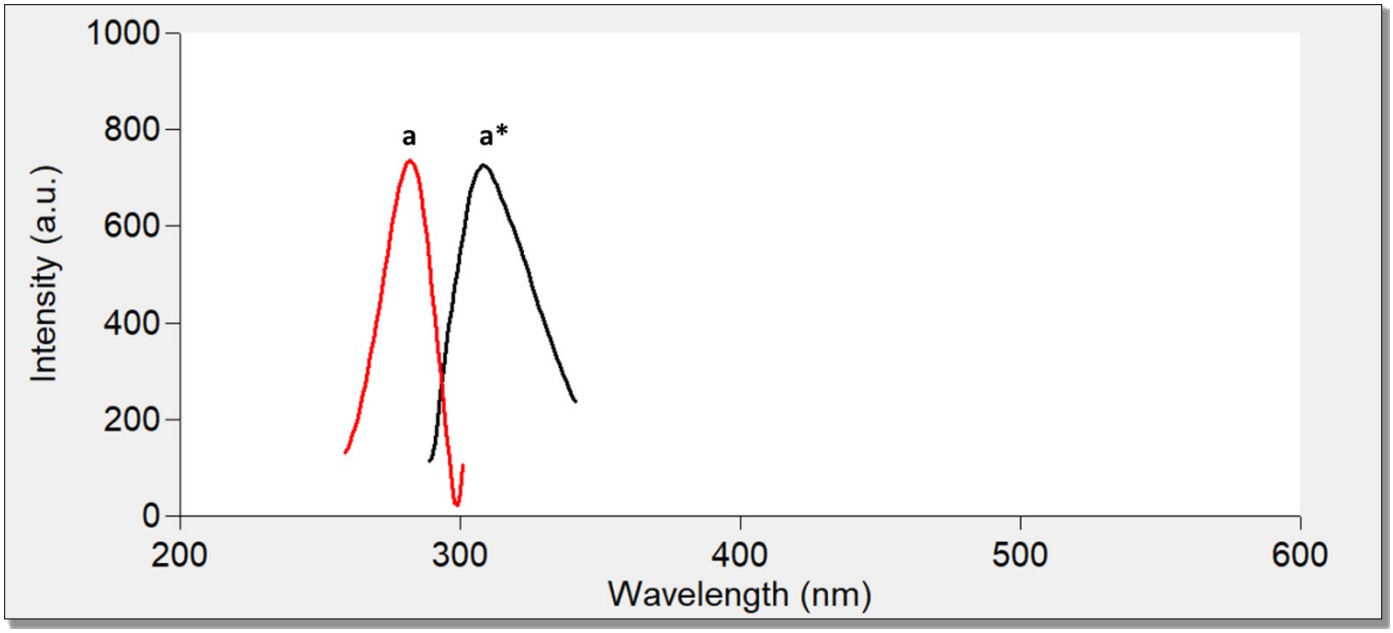


**Figure S1**

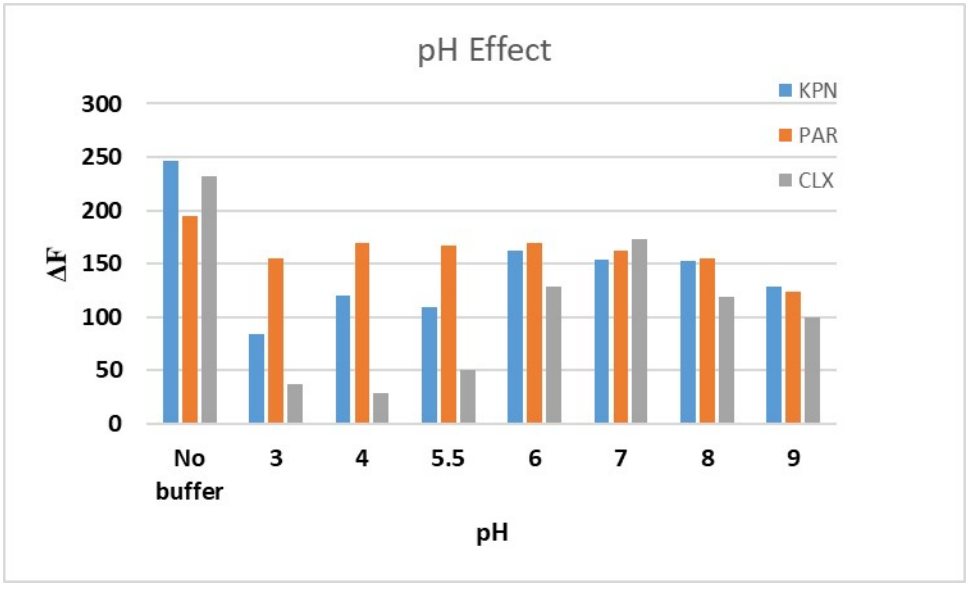


**Figure S2**

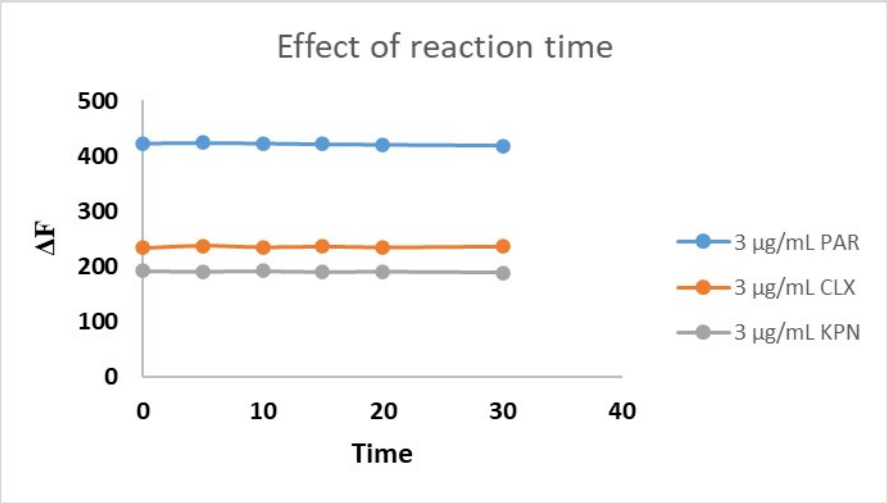
Effect of reaction time
500
400
300
200
100
0
ΔF
0
10
20
30
40
Time
3 µg/mL PAR
3 µg/mL CLX
3 µg/mL KPN

**Figure S3**

**Table S1:** Linearity range comparison of reported methods and proposed method for the determination of KPN.

| Method | Linearity range | Reference |
|---|---|---|
| Ion chromatography with a fluorescence detector | 0.2–1.5 mg $kg^{-1}$ | **[5]** |
| Derivative IR spectroscopy | (1000 to 4000) µg/ml | **[6]** |
| HPLC | 0.025-0.5 mg/mL | **[7]** |
| Electrochemical method | 9 µM to 5 mM | **[8]** |
| Liquid chromatography/tandem mass spectrometry following automated solid-phase extraction in the 96-well format | 0.05 to 2500 ng/ml | **[9]** |
| Gas chromatography-mass spectrometry | 0.6-5000 ng/kg | **[10]** |
| Terbium sensitized luminescence method | $2.8 \times 10^{-7}$-$3.1 \times 10^{-6}$ M | **[11]** |
| Copper-doped CdS quantum dots and zinc oxide nanorods | 0.05–35.5 µM | **[12]** |
| Hybrid nanoparticle-based fluorescence switch | 0–25.0 µM | **[13]** |
| Quenching of quantum dots | 0.03–0.393 mM | **[14]** |
| Surface Molecularly Imprinted Carbon Dots | 0.039–3.9 µM | **[15]** |
| Quenching of silver nanoparticles | 0.0019-0.019 µM | **Suggested method** |

**Table S2:** Assay results for determination of the raw materials of KPN, PAR and CLX by the proposed method.

| | KPN | | | PAR | | | CLX | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Conc. taken (µg/mL)** | **Conc. found (µg/mL)** | **% Found[a]** | **Conc. taken (µg/mL)** | **Conc. found (µg/mL)** | **% Found[a]** | **Conc. taken (µg/mL)** | **Conc. found (µg/mL)** | **% Found[a]** |
| | 0.5 | 0.498 | 99.60 | 0.15 | 0.15 | 100.00 | 0.5 | 0.493 | 98.60 |
| | 1.0 | 0.992 | 99.20 | 0.3 | 0.304 | 101.33 | 1.0 | 0.989 | 98.90 |
| | 1.5 | 1.496 | 99.73 | 0.9 | 0.885 | 98.33 | 2.0 | 2.007 | 100.35 |
| | 2.5 | 2.513 | 100.52 | 1.5 | 1.503 | 100.20 | 3.0 | 3.013 | 100.43 |
| | 3.0 | 3.025 | 100.83 | 1.8 | 1.802 | 100.11 | 4.0 | 4.037 | 100.93 |
| | 4.0 | 4.013 | 100.33 | 2.4 | 2.407 | 100.29 | 5.0 | 5.028 | 100.56 |
| | 5.0 | 4.951 | 99.02 | 3 | 2.997 | 99.90 | 6.0 | 6.057 | 100.95 |
| | | | | | | | 7.0 | 6.955 | 99.36 |
| | | | | | | | 8.0 | 8.006 | 100.08 |
| | | | | | | | 9.0 | 8.939 | 99.32 |
| **Mean** | | | 99.98 | | | 100.023 | | | 99.95 |
| **± S.D.** | | | 0.678 | | | 0.885 | | | 0.844 |

**[a] Average of three separate determinations**