**Supplementary information**

**Electrochemical sensitive determination of** **acetaminophen in pharmaceutical formulations at iron oxide/graphene composite modified electrode**

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Fig. S1. Calibration plot for the anodic peak current of of 0.1 M KCl containing 2.5mM K3[Fe(CN)6] vs the square root of scan rate at (A) RGO/GCE (B) Fe2O3/RGO/GCE



Fig. S2. Cyclic voltammetric responses of Fe2O3/RGO/GCE for 50 µM AC in 0.1 M PBS (pH 4.0) in presence of various interfering compounds.



Fig. S3. Cyclic voltammetric responses of Fe2O3/RGO/GCE for 50 µM AC in 0.1 M PBS (pH 4.0) in terms of stability



Fig. S4. Cyclic voltammetric responses of Fe2O3/RGO/GCE for 50 µM AC in 0.1 M PBS (pH 4.0) in terms of reproducibility for 3 different electrodes under same experimental conditions



Fig. S5. Cyclic voltammetric responses of Fe2O3/RGO/GCE for standard addition of ( a) blank (b) 5 µM, (c) 10 µM, (e) 15 µM and (f) 20 µM of AC standard sample for (A) 5 µM, (B) 10 µM, (C) 20 µM and (D) 30 µM tablet sample in 0.1 M PBS (pH 4.0).



Fig. S6. Cyclic voltammetric responses of Fe2O3/RGO/GCE for standard addition of ( a) blank (b) urine sample (c) 5 µM, (d) 10 µM, (f) 15 µM and (g) 20 µM of AC standard sample for (A) 5 µM, (B) 10 µM, (C) 20 µM and (D) 30 µM AC spiked sample in 0.1 M PBS (pH 4.0).