Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary

A ratiometric fluorescence sensor for detection of metformin based on terbium-1, 10-phenanthroline-nitrogen-doped-graphene quantum dots

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Figures

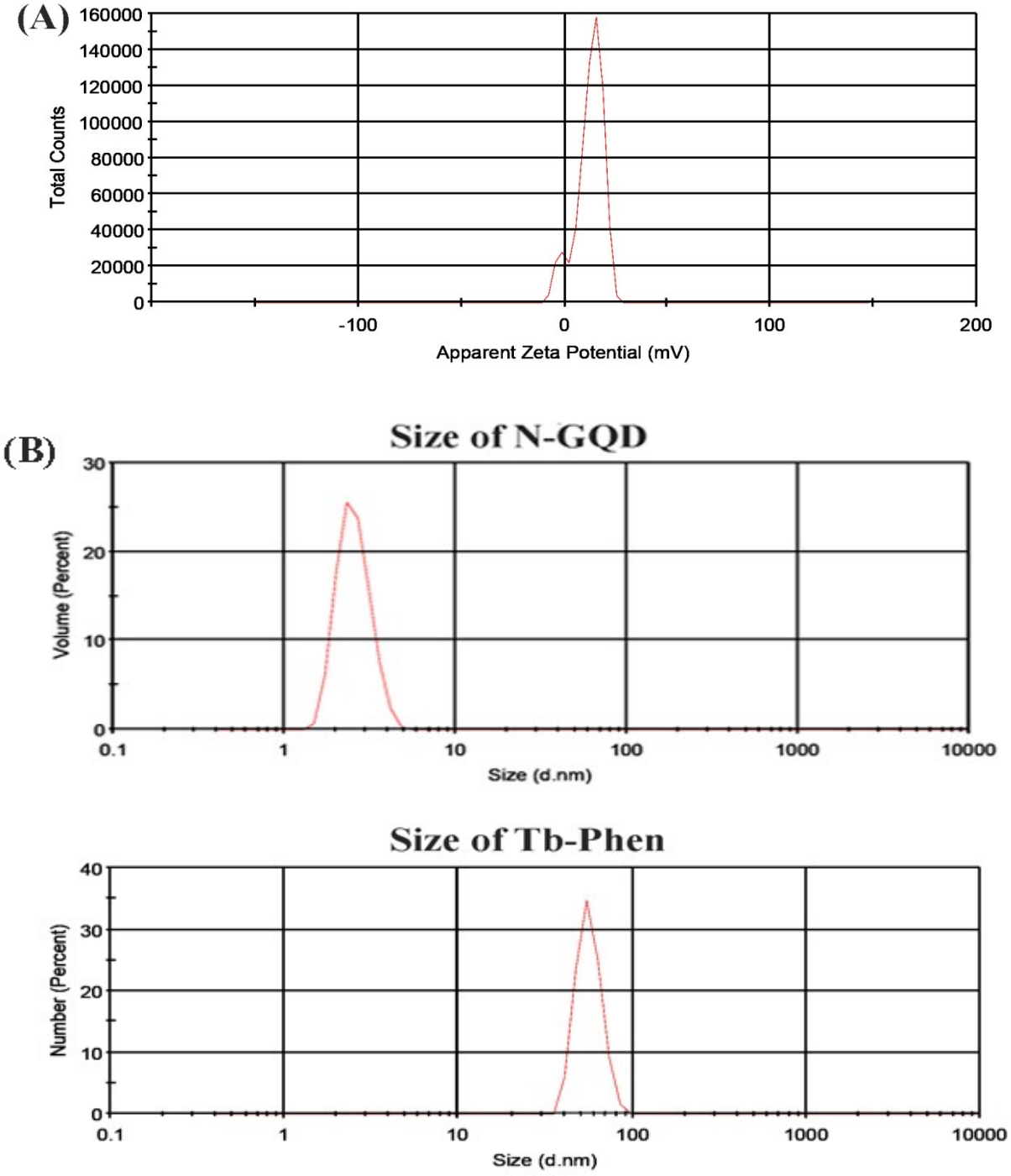


Fig. 1S. (A) Zeta analysis and (B) DLS analysis of particle size of N-GQDs/Tb-Phen NPs.

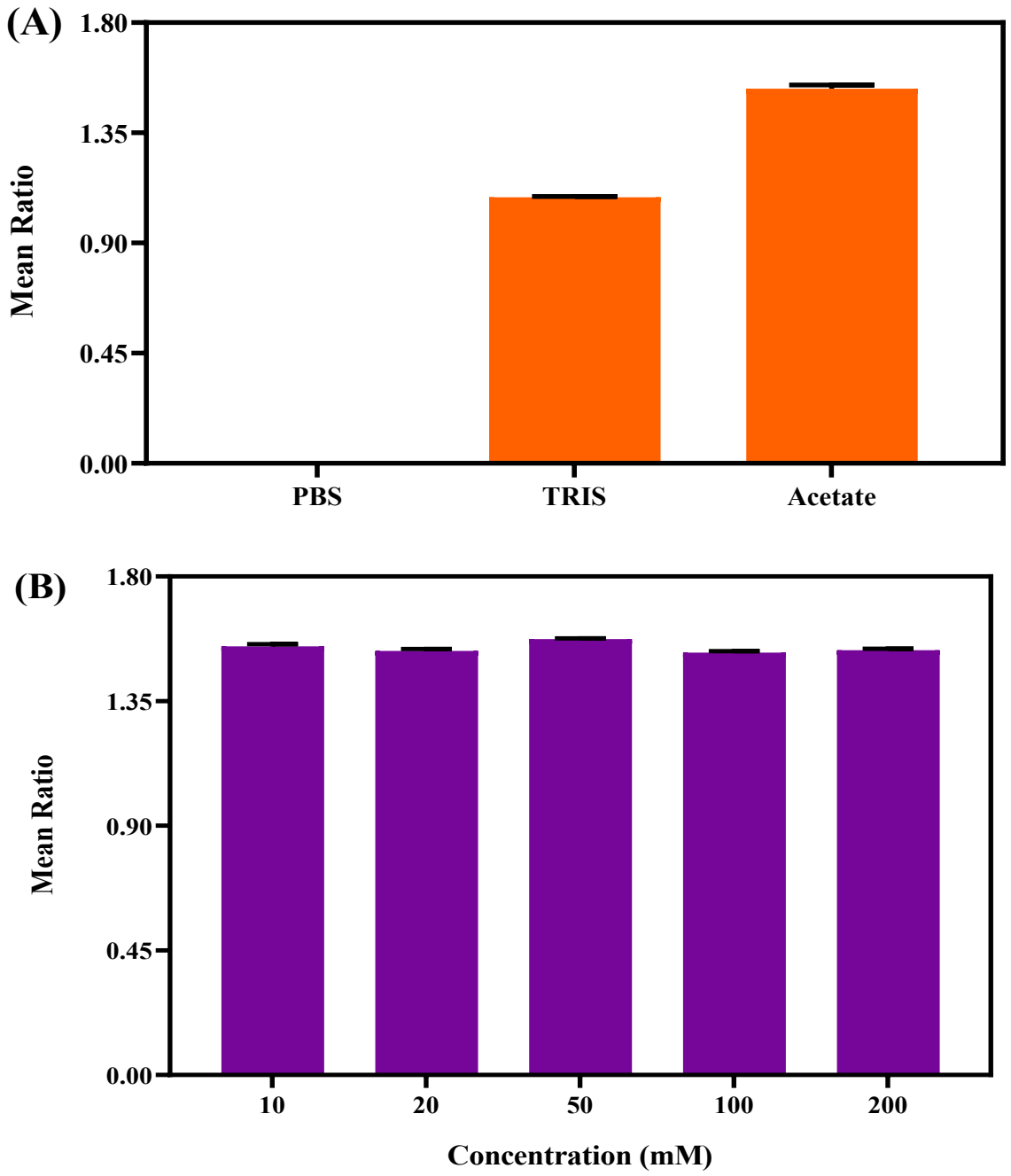
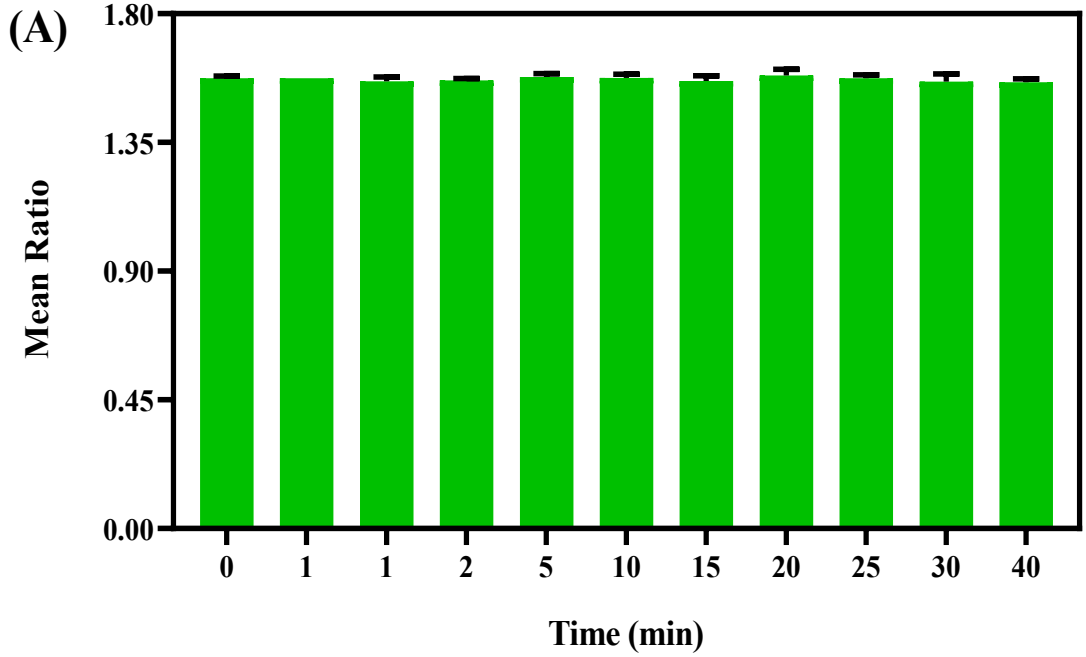
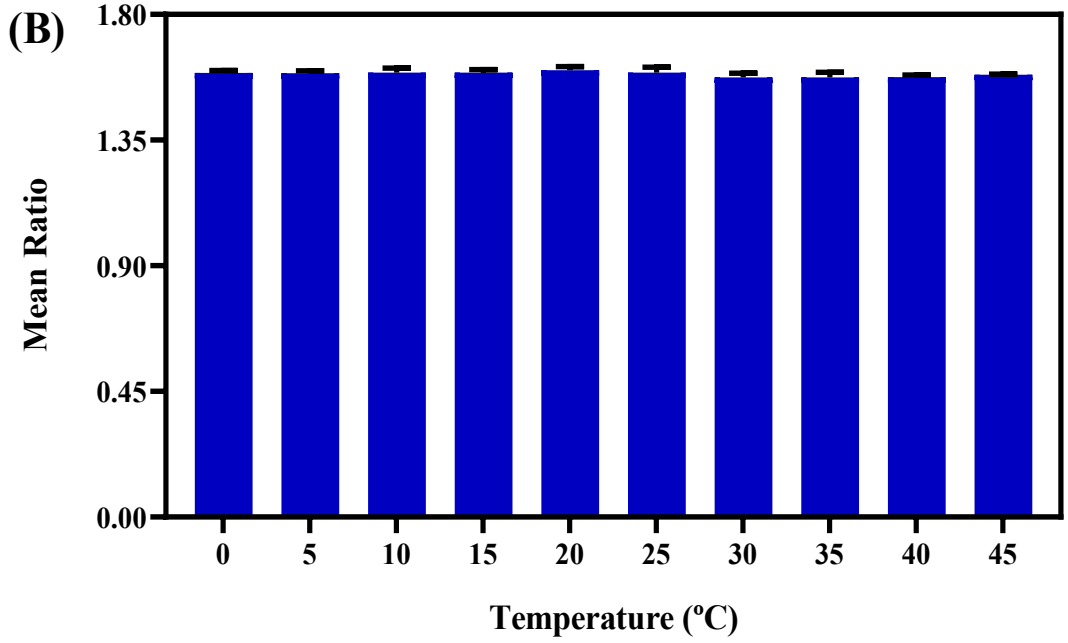


Fig. 2S. (A) The effect of buffer type and (B) buffer concentration on the response of N-GQDs/Tb-Phen NPs sensor in the presence of 1.0×10^{-6} M of MTF.


(A)
1.80
1.35
0.90
0.45
0.00
Mean Ratio
0
1
1
2
5
10
15
20
25
30
40
Time (min)


(B)
1.80
1.35
0.90
0.45
0.00
Mean Ratio
0
5
10
15
20
25
30
35
40
45
Temperature (ºC)

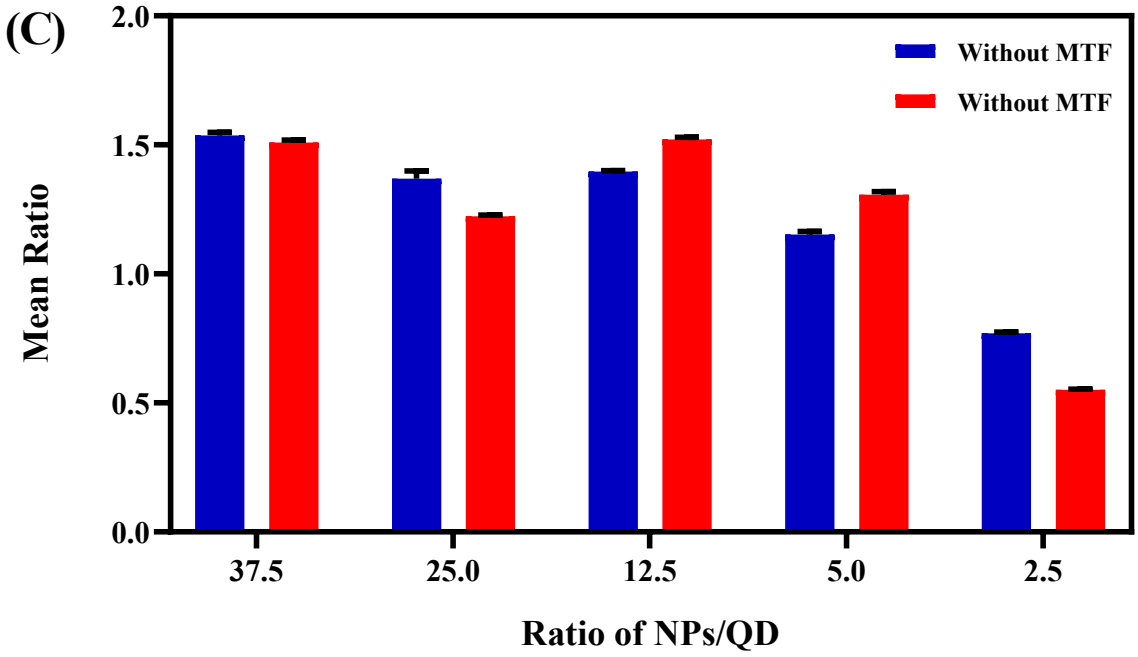


Fig. 3S. Effect of (A) incubation time, (B) temperature on the fluorescence ratio of N-GQDs/Tb-Phen NPs sensor in the presence of 1.0×10^{-6} M of MTF, in acetate buffer solution (0.05 M), and (C) the concentration ratio of N-GQDs to Tb–Phen NPs for the preparation of N-GQDs/Tb-Phen NPs in the absence and presence of MTF (1.0×10^{-6} M) in acetate buffer solution (0.05 M). Conditions: pH 7.5 and 20 ºC.

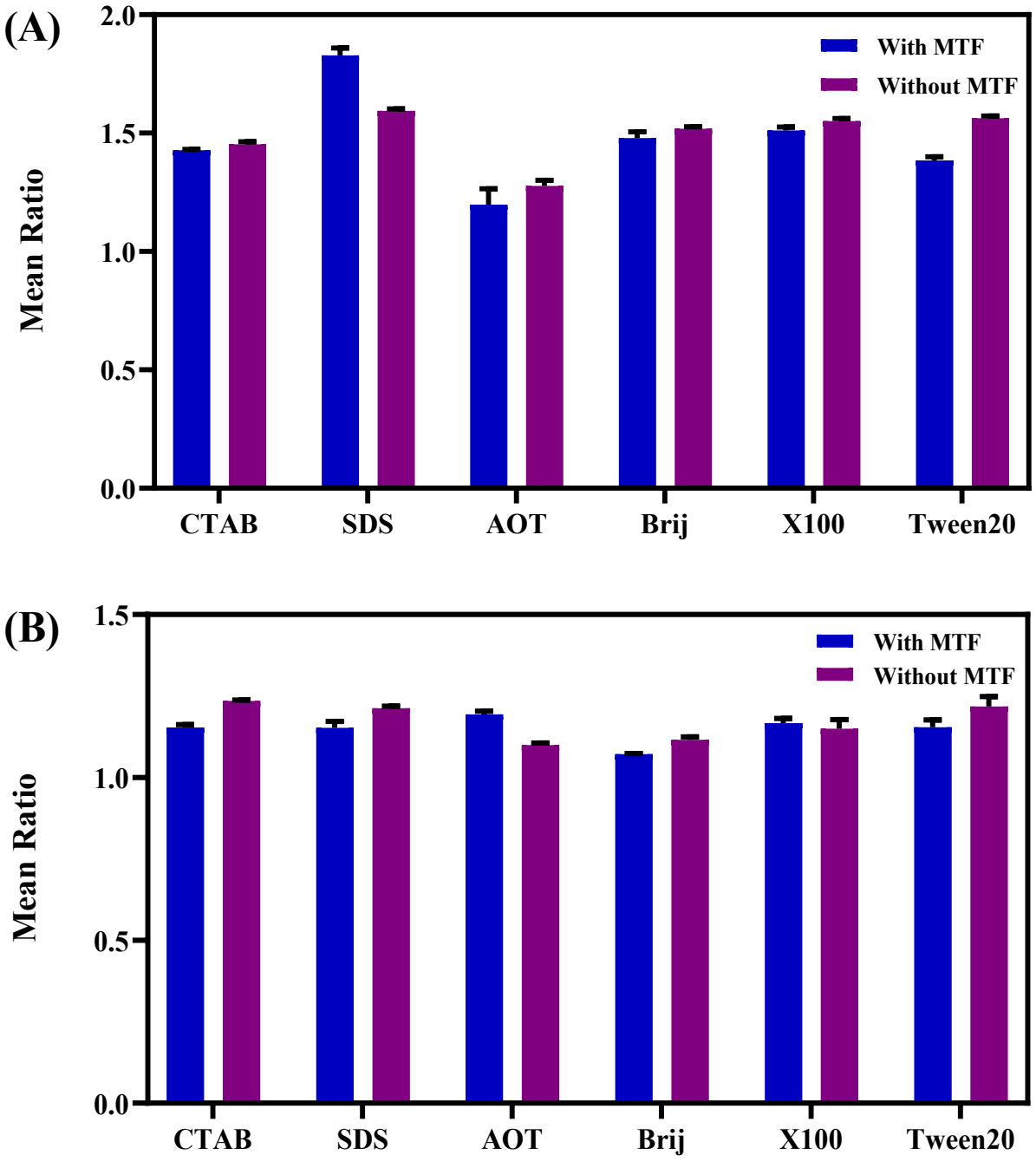


Fig. 4S. (A) Fluorescence ratio changes of N-GQDs/Tb-Phen NPs sensor in the presence of various surfactants without and with MTF (1.0×10^{-6} M) at CMC concentration, and (B) lower CMC concentration.

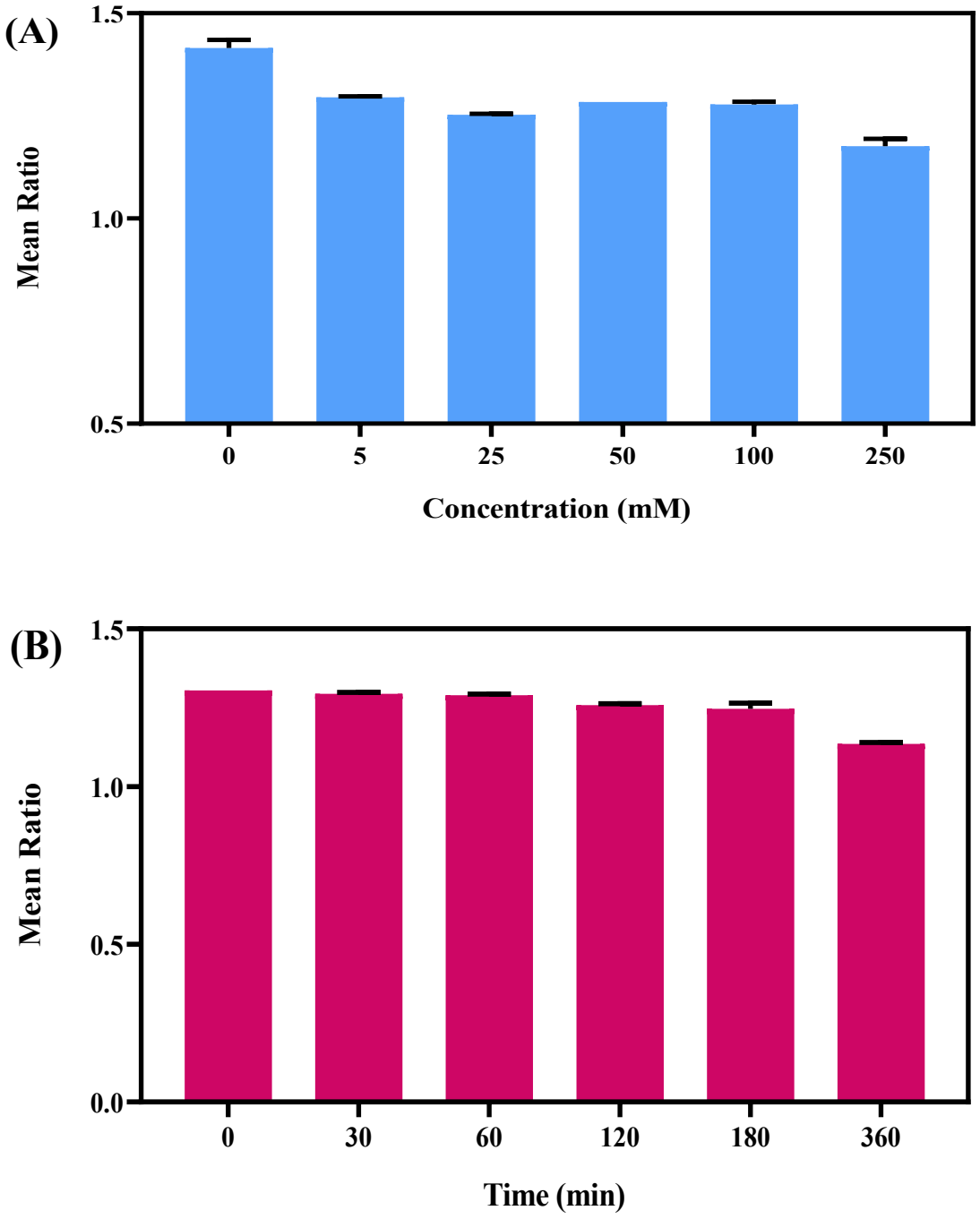


Fig. 5S. (A) The effects of UV light and (B) salt on the fluorescence ratio changes of N-GQDs/Tb-Phen NPs sensor in the presence of 1.0×10^{-6} M MTF, in acetate buffer solution (0.05 M).