Electronic Supplementary Information (ESI)

Developing acetylcholinesterase based inhibition assay by modulated synthesis of silver nanoparticles: Application for sensing of organophosphorus pesticides

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Fig. S1. Chemical structures of A) Trichlorfon and B) Malathion

Trichlorfon

Malathion
Fig. S2. A) FT-IR spectra of acetylthiocholine before and after interaction with citrate capped AgNPs and B) its secondary derivative spectra.
Fig. S3. Particle size distribution of AgNPs formed in the system containing AgNO$_3$ (1 mM), Na$_3$C$_6$H$_5$O$_7$ (1 %), NaBH$_4$ (10 mM) A) AChE (100 mU mL$^{-1}$) alone and B) ATCh (0.1 mM) alone.
Fig. S4. Particle size distribution of AgNPs formed in the system containing AgNO$_3$ (1 mM), Na$_3$C$_6$H$_5$O$_7$ (1 %), NaBH$_4$ (10 mM), AChE (100 mU mL$^{-1}$), ATCh (0.1 mM) with A) trichlorfon (1 nM) and B) malathion (1 nM).
Fig. S5. Zeta potential value of AgNPs formed in the system containing AgNO$_3$ (1 mM), Na$_3$C$_6$H$_5$O$_7$ (1 %), NaBH$_4$ (10 mM), AChE (100 mU mL$^{-1}$) and ATCh (0.1 mM) with A) trichlorfon (1 nM) and B) malathion (1 nM) respectively.
Table S1. Effect of interferences in unspiked real samples in comparison with Milli-Q water.

<table>
<thead>
<tr>
<th>Sample</th>
<th>A0 (unspiked Real samples)</th>
<th>A0 (Milli-Q water)</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural runoff water</td>
<td>0.367</td>
<td>0.401</td>
<td>0.017</td>
</tr>
<tr>
<td>Apple</td>
<td>0.369</td>
<td>0.401</td>
<td>0.016</td>
</tr>
<tr>
<td>Cabbage</td>
<td>0.359</td>
<td>0.401</td>
<td>0.021</td>
</tr>
</tbody>
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