Supporting Information

Potentiometric biosensing system based on an isolated degrading bacterium *Klebsiella* sp. MP-6 for the determination of methyl parathion

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Optimization of the MISPE for preconcentration of MP

The pretreatment processes with MISPE were optimized in terms of the eluting solvent, eluent volume and amount of sorbent to obtain a higher sensitivity. The effect of the eluting solvent on the recovery of methyl parathion (MP) was studied. It can be seen that with acetonitrile as eluting solvent, the recovery of methyl parathion is the highest (Fig. S1a). The most likely reason is that the polarity of acetonitrile is suitable to dissolve methyl parathion, thus effectively reducing the hydrogen-bonding and/or hydrophobic interactions between the MIP and the template (i.e., methyl parathion). To optimize the eluting volume, different volumes of acetonitrile were used (Fig. S1b). The results show that by increasing the solvent volume from 2 mL to 10 mL, the recovery of MP extracted increases from 22% to 90%. The high-efficiency elution can be observed at the eluting volume of 10 mL. When the eluting volume is further increased, the recovery cannot be increased significantly. Thus, 10 mL was selected as the optimum eluting volume for MISPE. In order to obtain the higher extraction efficiency, different amounts of the sorbent were compared (Fig. S1c). As shown in Fig. 6c, the recoveries are lower with 10 mg and 20 mg sorbent due to the less binding sites in the extracting material. The higher recovery could be obtained with 30 mg sorbent. At loading amounts higher than 30 mg, the recovery would not increase any more probably due to the saturation of the binding sites.

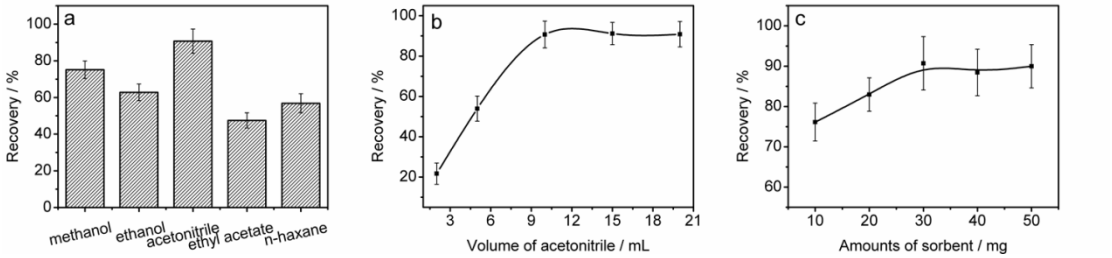

Fig. S1 Recoveries of MP obtained with (a) different eluting solvents, (b) different eluting volumes and (c) different amounts of sorbent. Unless stated otherwise, the extraction conditions were as follows: 30 mg MIP sorbent, 10 mL methanol for conditioning, 100 mL sample, 10 mL ultrapure water for washing, and 10 mL acetonitrile as eluent.