



Corrigendum

Corrigendum to “Detection of p53 gene point mutation using sequence-specific molecularly imprinted PoPD electrode”

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A reader has brought to our attention remarkable similarities between portions of the FTIR spectra in Figs. 3B and C in this paper. In the absence of any irrefutable explanation for this apparent phenomenon and to avoid any doubt about our conclusions, we have repeated the experiments and wish to substitute the FTIR spectra in Fig. 3 with those below, together with a more detailed explanation of the results.

1. Preparation of molecularly imprinted polymer (MIP) and non-imprinted polymer (NIP) electrodes

Molecularly imprinted polymer was synthesised on the ITO electrode surface using cyclic voltammetry. The method utilised a three-electrode system, in which ITO acted as the working electrode, Ag/AgCl as a reference electrode and platinum as the counter electrode. The process was carried out over the potential range 0.2–0.8 V at a scan rate of 50 mVs⁻¹ in electrolytic solution containing 5 mM o-phenylenediamine and 20 M template ss-ODN in acetate buffer, pH 5.2. Post polymerization, the electrode was washed for 45 min to remove the template ss-ODN molecules using sterilised ethanol: water (10: 2, v/v) solution containing 0.1 M NaOH, Further, followed by washing with Milli-Q water. The NIP was prepared under similar conditions, except that the electrolyte did not contain template molecule. MIP and NIP modified ITO electrodes were dried under a nitrogen flow and stored at room temperature.

2. FTIR study

The replacement Fig. 3 shows the FTIR spectra of the (A) ss-ODN/PoPD/ITO electrode, (B) MIP/ITO electrode, and (C) NIP/ITO electrode. The spectra were acquired by repeating the experiments as per the stated methods in the published article.

The FTIR spectrum (A) of the template ss-ODN/PoPD/ITO electrode showed peaks broadening at (1) 1230 cm⁻¹ (phosphate vibration accredited to the phosphate backbone of the template ss-ODN); (2) 3350–3523 cm⁻¹ (N–H stretching vibration); and (3) 1621–1654 cm⁻¹

(amide vibrations). The FTIR spectra of the template ss-ODN/PoPD/ITO electrode confirmed the close electrostatic interaction between the template ss-ODN. After being washed with sterilised ethanol-water containing NaOH followed by washing with Milli-Q water, the resulting MIP/ITO electrode showed a similar FTIR spectrum as that of NIP/ITO, exhibiting similar PoPD absorption bands within the range of 500 – 4000 cm⁻¹. The FTIR spectra confirmed the complete removal of the template ss-ODN from the template ss-ODN/PoPD/ITO electrode.

The FTIR peaks assigned to the polymeric structures are similar in washed, unwashed MIP and NIP. However, the template molecule peak at 1230 cm⁻¹ is only found in the unwashed MIP, due to entrapment of template molecule inside the sieves. Peaks observed at lower wave numbers, such as, 878 and 588 cm⁻¹ belong to N–H stretching and oxalate dopant is also present in unwashed MIP. The FTIR spectra show the following peaks:

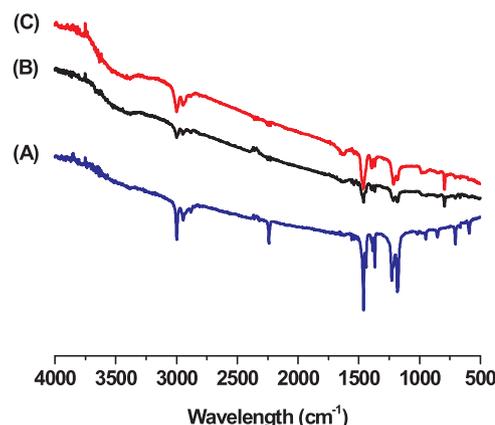


Fig. 3. FTIR spectra of the (A) template ss-ODN/PoPD/ITO, (B) MIP/ITO, and (C) NIP/ITO electrodes.

DOI of original article: <http://dx.doi.org/10.1016/j.bios.2012.02.053>

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S. No.	Peaks (cm^{-1})	Electrode	Inference	Reference
1.	3350–3523 cm^{-1}	(A) ss-ODN/PoPD/ITO, (B) MIP/ITO and (C) NIP/ITO electrodes.	N–H stretching vibration	(Gerhards and Unterberg, 2001; Muthirulan et al., 2013)
2.	1621–1654 cm^{-1} .	(A) ss-ODN/PoPD/ITO, (B) MIP/ITO and (C) NIP/ITO electrodes.	Amide vibrations	(Muthirulan et al., 2013)
3.	1230 cm^{-1}	(A) ss-ODN/PoPD/ITO	Phosphate vibration accredited to the phosphate backbone of the template ss-ODN	(Oldenhof et al., 2016)
4.	1367–1375 cm^{-1}	(A) ss-ODN/PoPD/ITO, (B) MIP/ITO and (C) NIP/ITO electrodes.	C–N stretching vibrations in the quinoid imine units	(Wang and Liao, 2012; Fouad and Jarour, 2017; Mallakpour and Zadehnazari, 2014)
5.	843–755 cm^{-1}	(B) MIP/ITO and (C) NIP/ITO electrodes.	C–H out-of-plane deformation suggests the 1, 2, 4-trisubstituted benzene rings	(Wang and Liao, 2012)
6.	878 cm^{-1}	(A) ss-ODN/PoPD/ITO	N–H stretching	(Muthirulan et al., 2013; Fouad and Jarour, 2017)
7.	588 cm^{-1}	(A) ss-ODN/PoPD/ITO	Presence of oxalate dopant	(Muthirulan et al., 2013)

These results are entirely consistent with those originally reported in the published article.

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