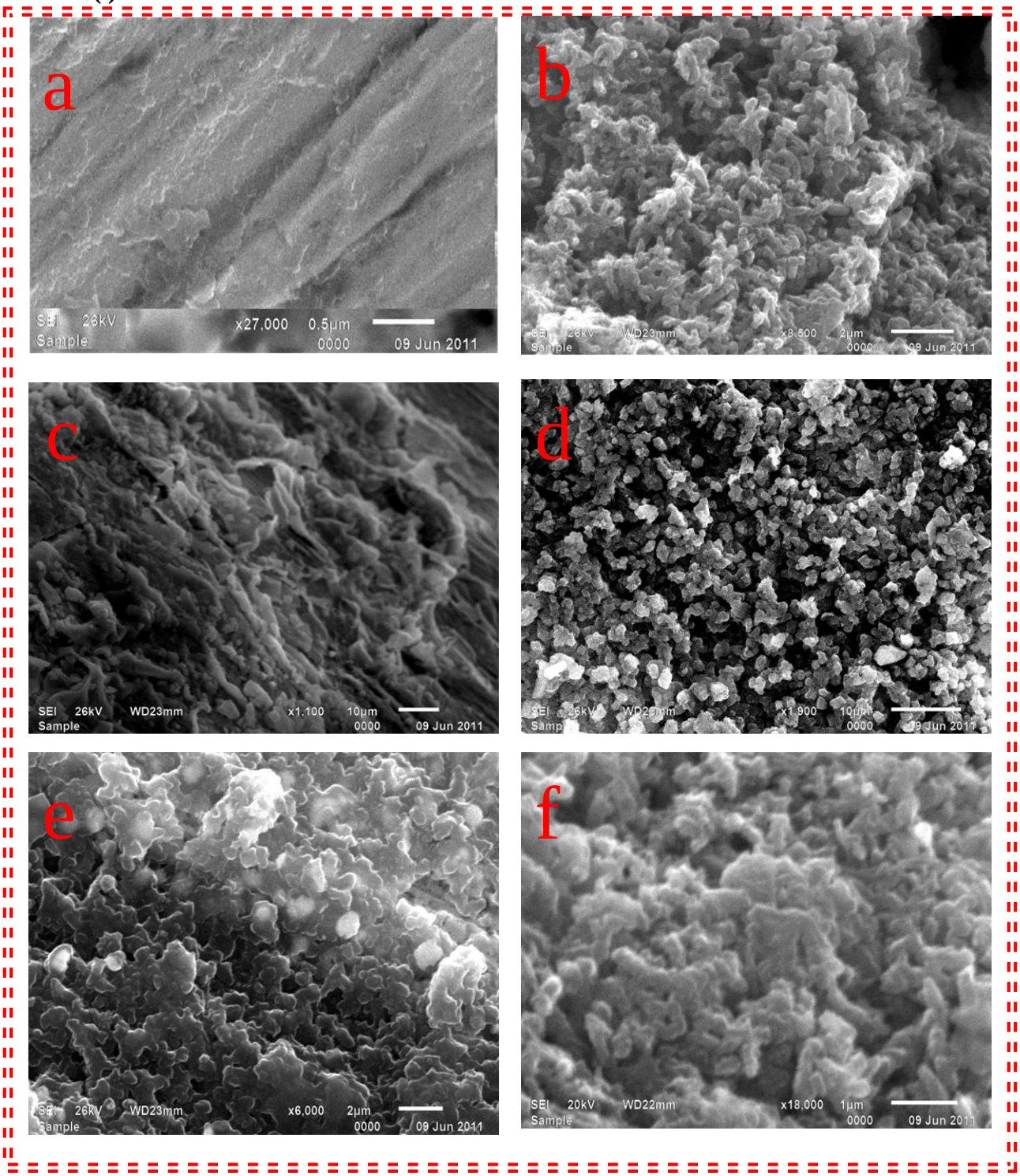
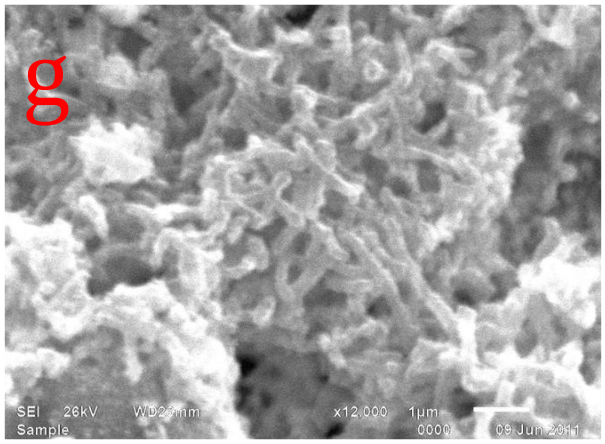
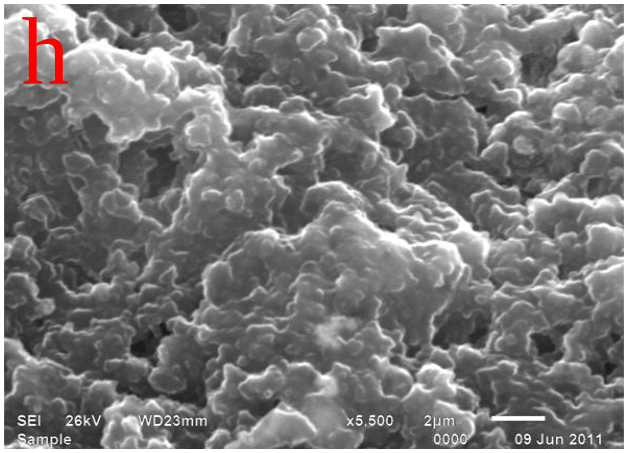
Supplementary Table 1: Effect of various substances on response of LOx/AuNPs/ c-MWCNT/PANI/AuE and LOx/AuNPs/c-MWCNT/DAB/AuE.

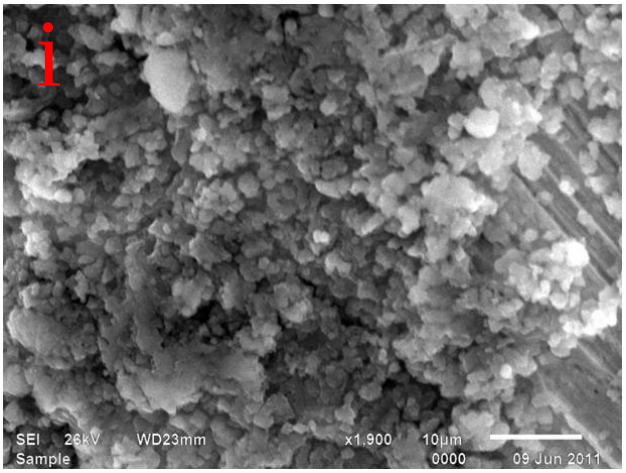
Substances added (1.0 mM)	% Relative activity/response	
	LOx/AuNPs/ c-MWCNT/PANI/AuE	LOx/AuNPs/ c-MWCNT/DAB/AuE
None	100	100
Tyrosine	101	107.4
Tryptophan	97	106
Serine	99.1	105.9
Phenylalanine	105	106
Histidine	102.5	112.7
Methionine	103	92
Proline	98	103.7
Arginine	96	107.7
Cysteine	101	105.7
Ornithine	103	99.6
Glutamic acid	99.3	105
Uric acid	103	105.7
Ascorbic acid	104	106.2

Supplementary Fig. 1. Scanning electron micrographs of the (a) bare Au electrode, (b) PANI onto gold electrode, (c) c-MWCNT/PANI onto Au electrode, (d) AuNPs/c-MWCNT/PANI, (e) LOx immobilized onto AuNPs/c-MWCNT/PANI, (f) DAB onto Au electrode, (g) c-MWCNT/DAB onto Au electrode, (h) AuNPs/c-MWCNT/DAB and (i) LOx immobilized onto AuNPs/c-MWCNT/DAB modified Au electrode.

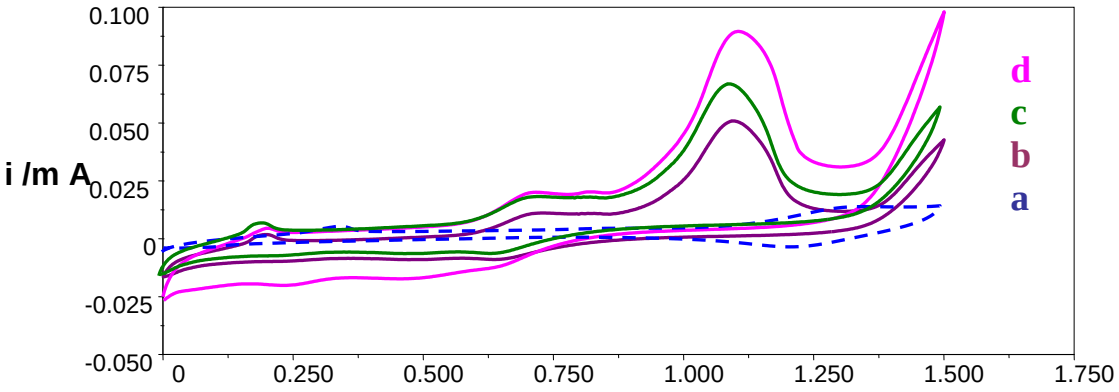




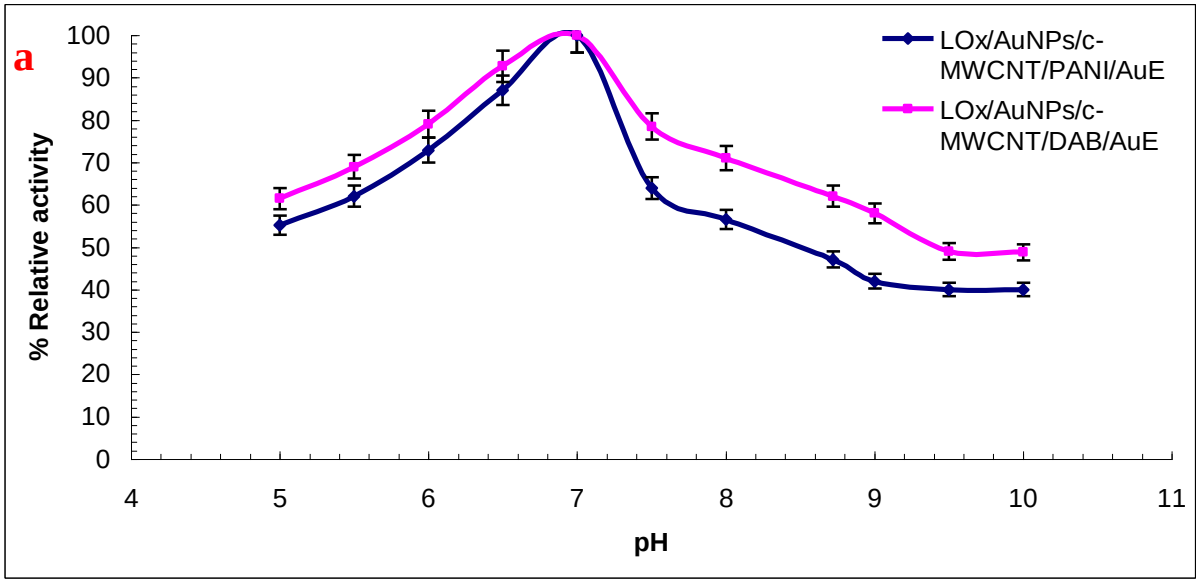


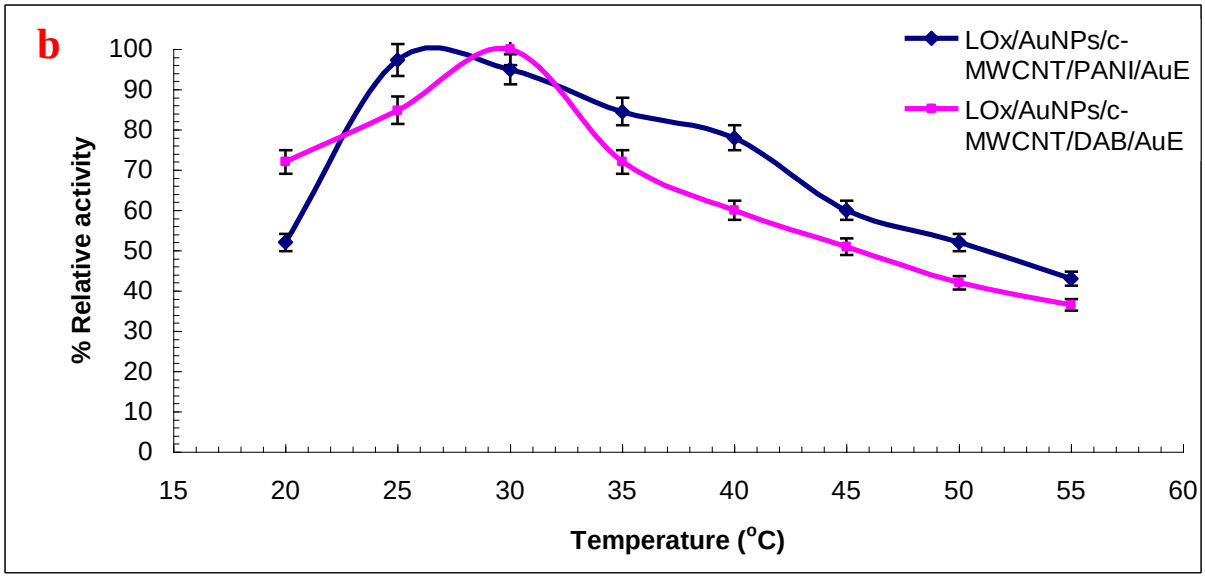


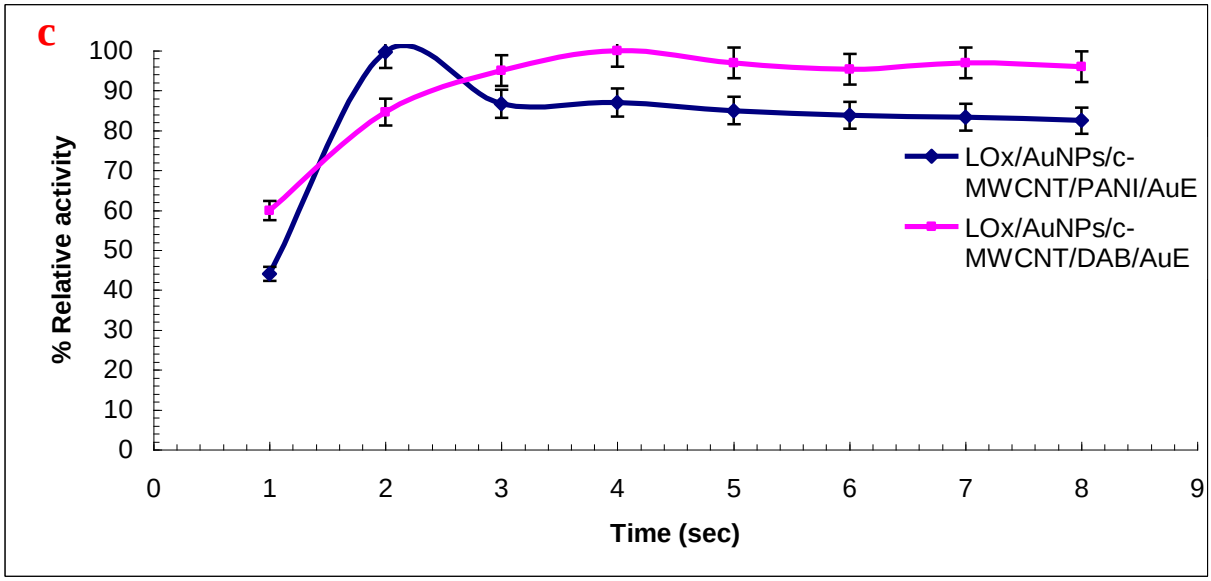
Supplementary Fig. 2. Cyclic voltammograms of (a) bare Au electrode, (b) AuNPs//PANI modified Au electrode, (c) c-MWCNT/PANI modified Au electrode and (d) AuNPs/c-MWCNT/PANI/Au electrode in 50 mM pH 7.0 phosphate buffer solution containing 0.1 mM lysine at a scan rate of 50 mV s^{-1}.



Supplementary Fig. 3. Effect of (a) pH, (b) incubation temperature and (c) response time on lysine oxidase bound AuNP/c-MWCNT/ PANI/Au electrode and AuNP/c-MWCNT/ DAB/Au electrode.







Supplementary Fig. 4. Effect of storage at 4^{o}C on the response of the lysine biosensor based on LOx bound AuNP/c-MWCNT/ PANI/Au electrode and AuNP/c-MWCNT/ DAB/Au electrode.