

## Supplementary Information

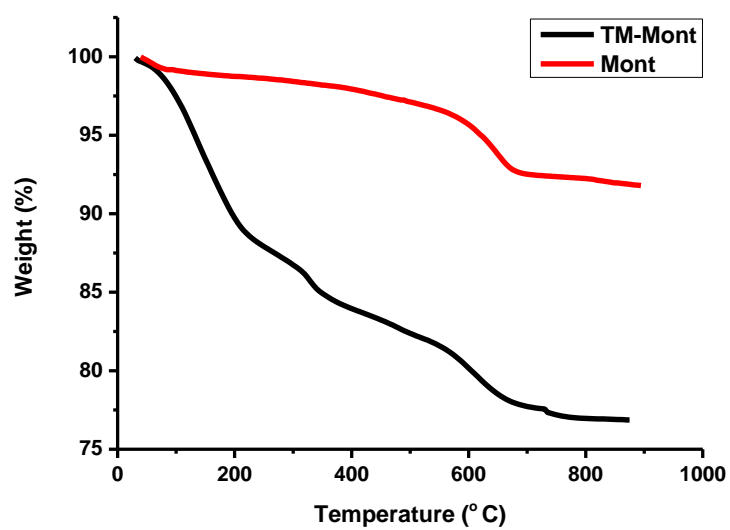
### **Amine Intercalated Clay Surfaces for Microbial Cell Immobilization and Biosensing Applications**

Bilal DEMIR<sup>a</sup>, Muharrem SELECI<sup>a</sup>, Didem AG<sup>a</sup>, Serdar CEVIK<sup>b</sup>, Esra Evrim YALCINKAYA<sup>c</sup>, Dilek ODACI DEMIRKOL<sup>a</sup>, Ulku ANIK<sup>b</sup>, Suna TIMUR<sup>a\*</sup>

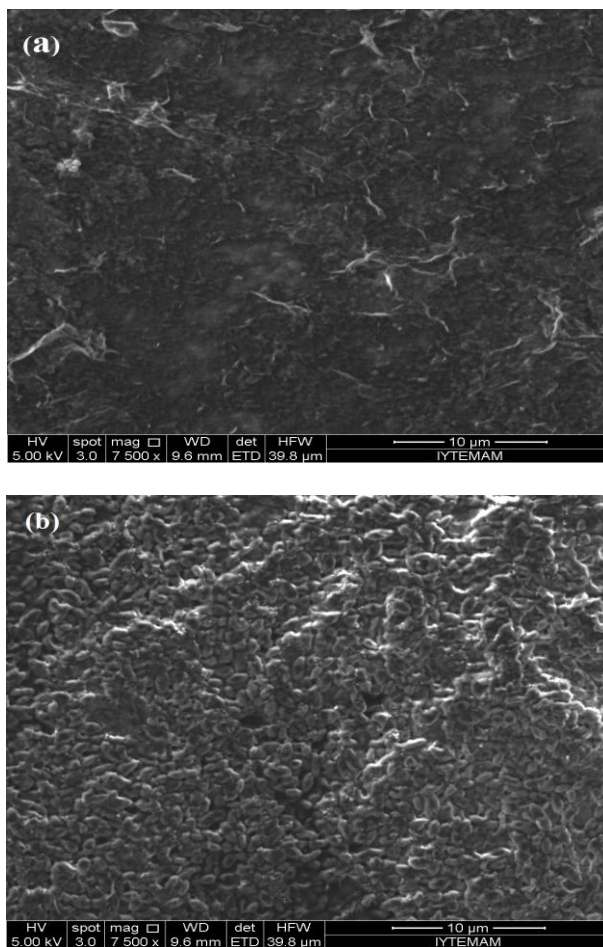
<sup>a</sup>Dept. of Biochemistry, Faculty of Science, Ege University, 35100 Bornova-Izmir, Turkey

<sup>b</sup>Dept. of Chemistry, Faculty of Science, Mugla Sitki Kocman University, Kotekli-Mugla, Turkey

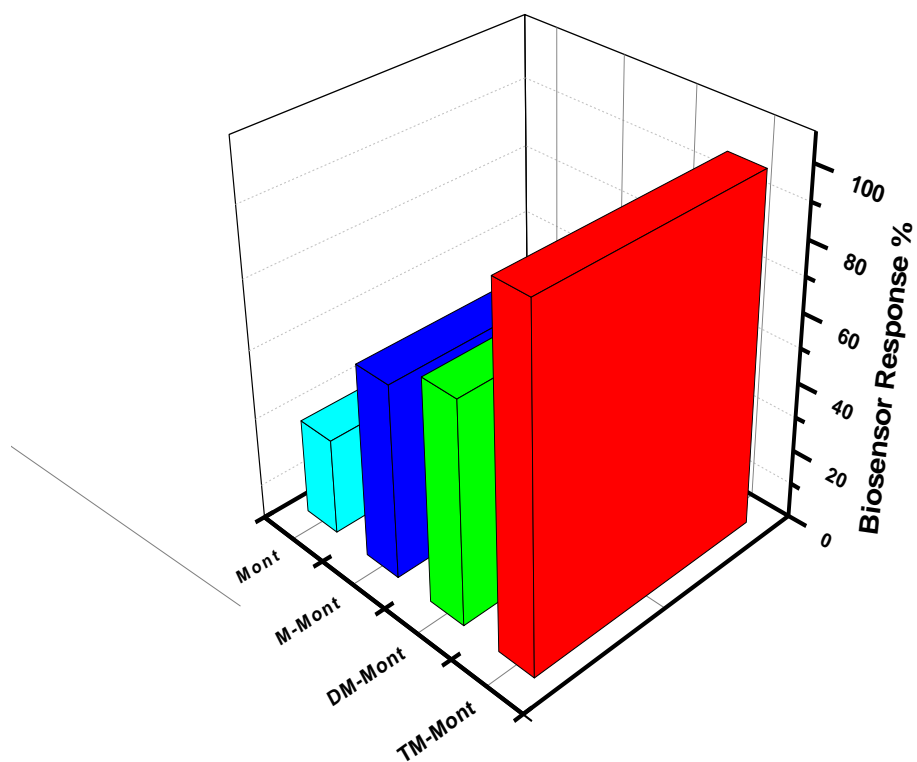
<sup>c</sup>Dept. of Chemistry, Faculty of Science, Ege University, 35100 Bornova-Izmir, Turkey



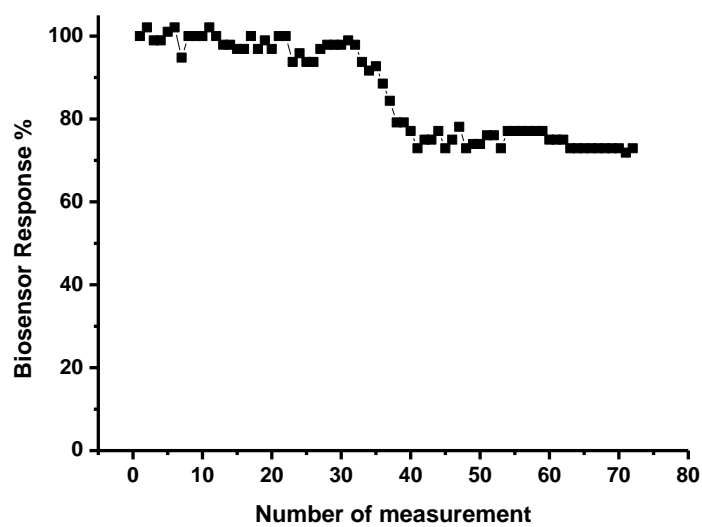
**Fig S1.** TGA thermograms of Mont and TM-Mont.



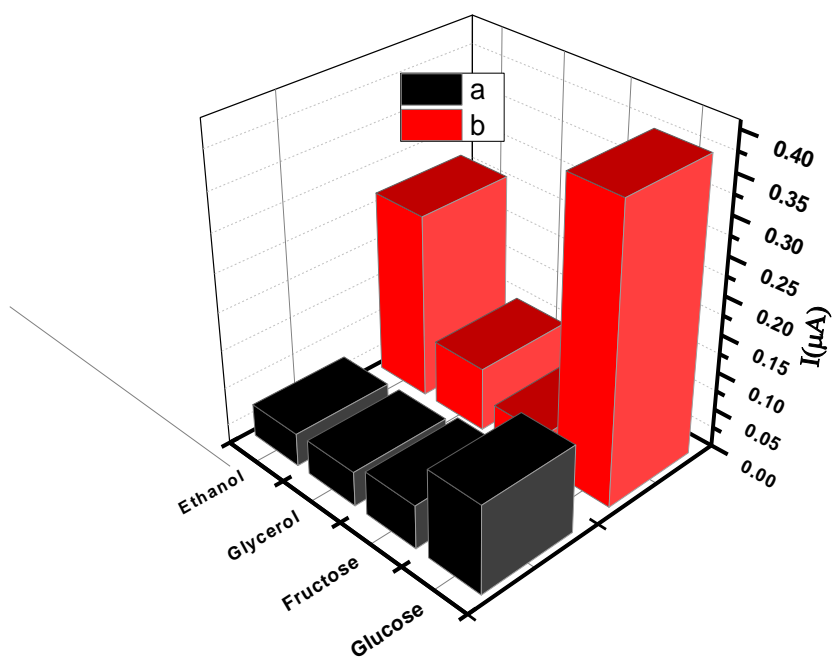
**Fig S2.** The surface structures of TM-Mont film (Composition: 1.0 mg/mL clay in distilled water containing BSA (1.0 mg/mL) and 1.0% GA) in the absence (a) and presence of *G. oxydans* (b) with 10 000x magnification).



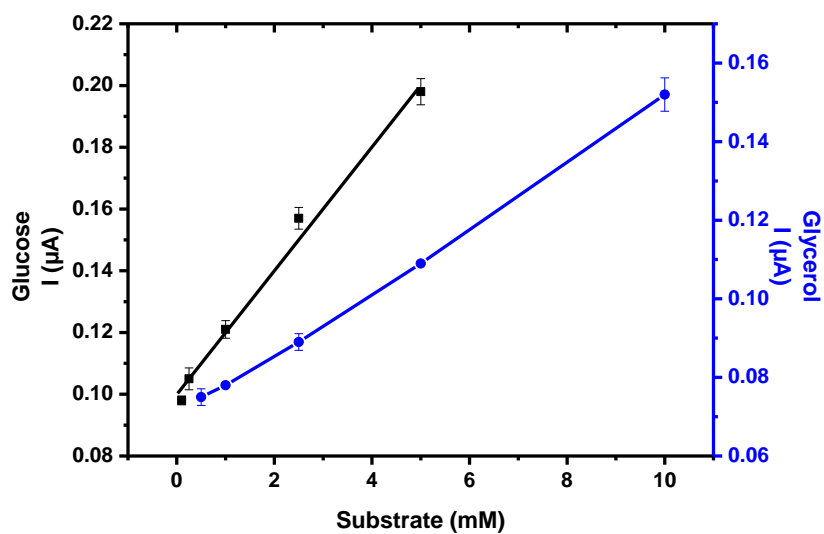
**Fig S3.** Influence of dopant agent to Mont/*G. oxydans* biosensor (0.5 mM glucose, -0.7 V, 50 mM (pH 6.5) sodium phosphate buffer and room temperature. Electrode composition is same as Fig 3).



**Fig S4.** Operational stability of TM-Mont/*G.oxydans* biosensor (at room temperature in 50 mM sodium phosphate buffer (pH 6.5) in FIA configuration. Electrode composition is same as Fig 3.).



**Fig S5.** Substrate specificity of *G. oxydans* cultivated with glucose (a) and glycerol (b) as a main carbon source. Glucose, fructose, glycerol and ethanol conc: 1.0 mM, (at -0.7 V in 50 mM sodium phosphate buffer (pH 6.5) at room temperature. Electrode composition is same as Fig 3).



**Fig S6.** Linearity for glucose (▪) and glycerol (●) obtained by TM-Mont/*G. oxydans* biosensor [at -0.7 V and room temperature in 50 mM sodium phosphate buffer (pH 6.5), in FIA configuration. Electrode composition is same as Fig 3 except for the glycerol calibration where glycerol was used as the main carbon source in the culture medium].

**Table 2.** Comparison of some characteristics of different amine intercalated Monts

	Mont	M-Mont <sup>*</sup>	DM-Mont <sup>*</sup>	TM-Mont
Zeta Potential (mV)	-42	-34.5	-32.1	-28.1
XRD-Basal Spacing Value ( $\text{\AA}$ )	11.4	12.71	13.14	14.66

<sup>\*</sup>M-Mont and DM-Mont values were purchased from previous work [27].