

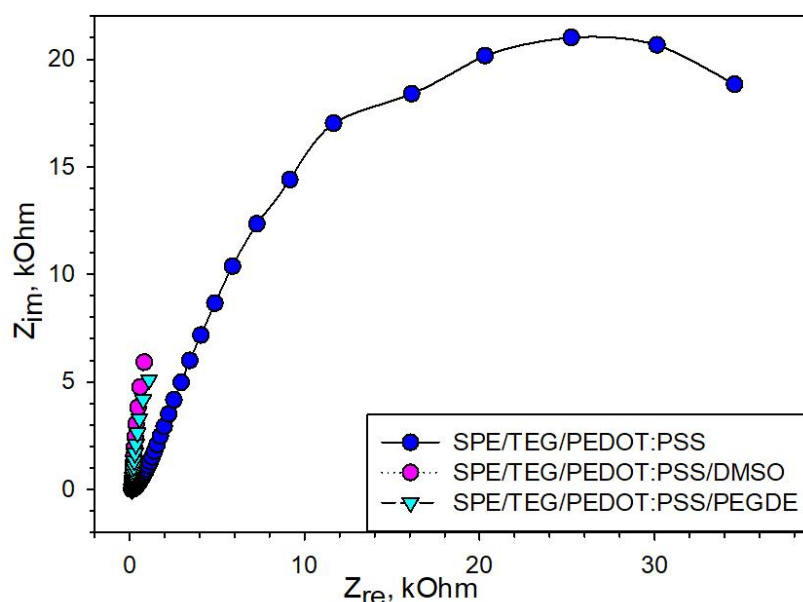
Supplementary

# Direct Bioelectrocatalytic Oxidation of Glucose by *Gluconobacter oxydans* Membrane Fractions in PEDOT:PSS/TEG-Modified Biosensors

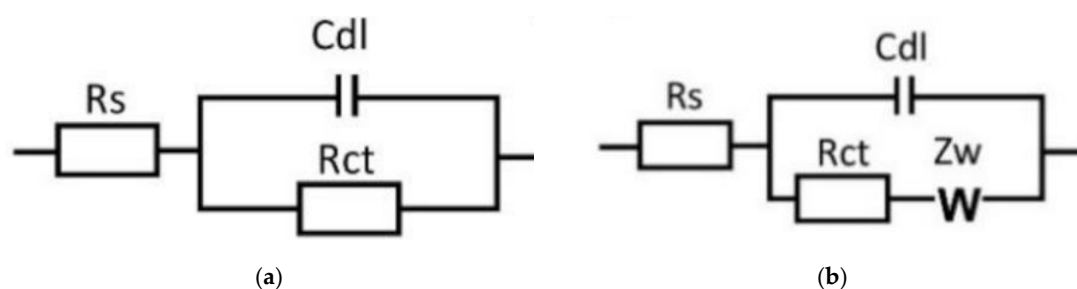
Anna Kitova, Sergei Tarasov, Yulia Plekhanova \*, Aleksandr Bykov and Anatoly Reshetilov \*

G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Pushchino Centre for Biological Research, Russian Academy of Sciences, 5 Prosp. Nauki, Pushchino, Moscow Region, 142290, Russian Federation; kitova@ibpm.pushchino.ru (A.K.); setar25@gmail.com (S.T.); agbykov@rambler.ru (A.B.)

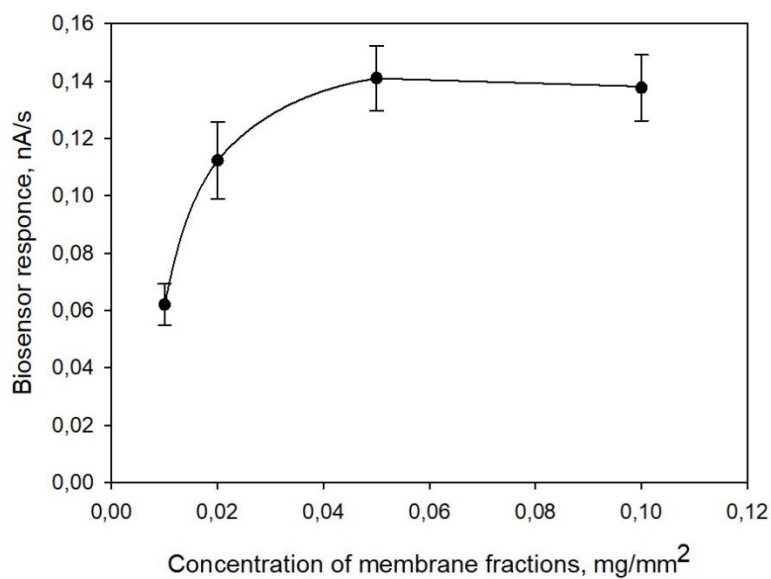
\* Correspondence: plekhanova@ibpm.pushchino.ru (Y.P.); anamol@ibpm.pushchino.ru (A.R.)



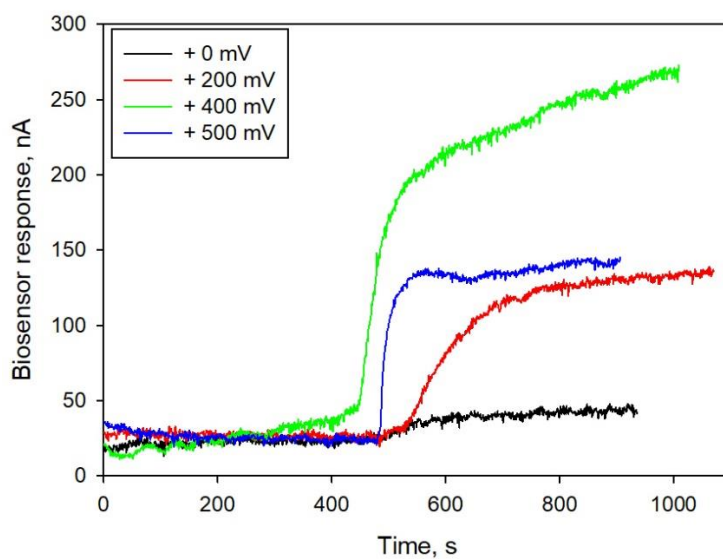
**Figure S1.** Change in EIS Nyquist plots, recorded in the presence of a 5 mM  $[\text{Fe}(\text{CN})_6]^{3-/4-}$  redox couple prepared in a 25 mM phosphate buffer with 0.01 M NaCl at an open-circuit potential (+ 200 mV vs. Ag/AgCl) due to the presence of TEG/PEDOT:PSS, TEG/PEDOT:PSS/DMSO and TEG/PEDOT:PSS/PEGDE on SPE.



**Figure S2.** Randles equivalent circuit (a) and modified Randles equivalent circuit (b) used to fit Nyquist plots for electrodes.  $R_s$ , solution resistance;  $R_{ct}$ , charge-transfer resistance;  $C_{dl}$ , double-layer capacitance;  $Z_w$ , Warburg impedance.



**Figure S3.** Respiratory activity of membrane fractions in the presence of glucose (0.5 mM) as a function of their concentration in a bioreceptor.



**Figure S4.** TEG/PEDOT:PSS/PEGDE biosensor signals in response to the addition of 0.5 mM glucose at various applied potentials (vs Ag/AgCl) without the presence of redox mediators.