

Article

Non-enzymatic Phenylboronic Acid-based Optode Membrane for Glucose Monitoring in Serums of Diabetic Patients and in the Culture Medium of Human Embryos

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Table S1. The effect of interfering materials at 10^{-1} glucose, 10^{-1} glucose+ 10^{-2} interfering species.

Sample Solution	Absorbance (A) at $\lambda_{\max}$ = 530 nm	Change in Absorbance (ΔA) Compared to Absorbance of the Glucose (0.578 a.u.)
Glucose	0.578	---
Glucose + sodium pyruvate	0.548	−0.030
Glucose + arginine	0.624	+0.046
Glucose + glutamic acid	0.574	−0.004
Glucose + tryptophan	0.574	−0.004
Glucose + leucine	0.597	+0.019
Glucose + sodium lactate	0.609	+0.031
Glucose + phenylalanine	0.599	+0.021

Table S2. The effect of different interfering ions at different concentrations.

Sample Solution	Absorbance (A) at $\lambda_{\max}$ = 530 nm	Change in Absorbance (ΔA) Compared to Absorbance of the Glucose (0.576 a.u.)
10^{-3} M glucose	0.576	---
10^{-3} M glucose + 10^{-4} M sodium pyruvate	0.532	−0.044
10^{-2} M glucose	0.578	---
10^{-2} M glucose + 10^{-3} M sodium pyruvate	0.574	−0.004
10^{-1} M glucose	0.59	---
10^{-1} M glucose + 10^{-2} M sodium pyruvate	0.56	−0.03
10^{-3} M glucose	0.955	---
10^{-3} M glucose + 10^{-4} M arginine	0.996	+0.041
10^{-2} M glucose	0.952	---
10^{-2} M glucose + 10^{-3} M arginine	0.953	+0.001
10^{-1} M glucose	0.974	---
10^{-1} M glucose + 10^{-2} M arginine	1.02	+0.046

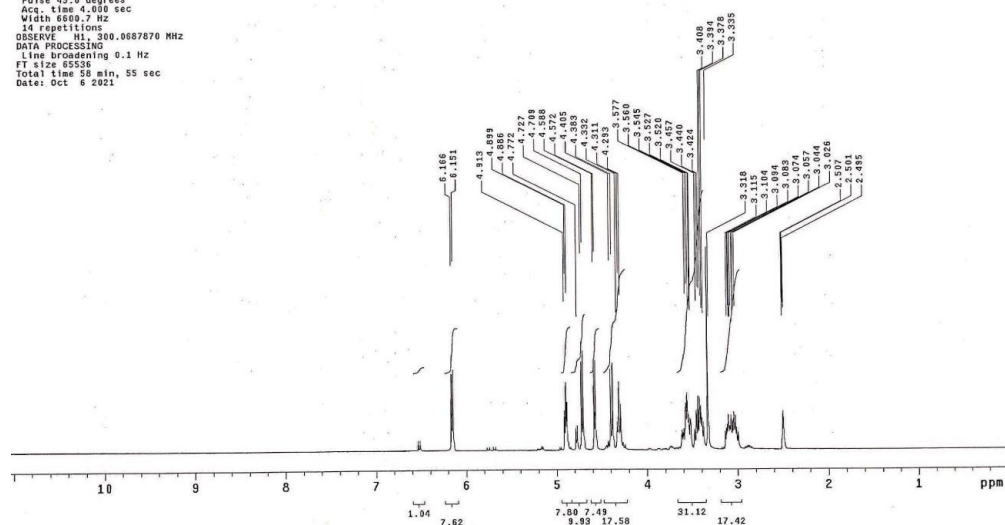
10 ⁻³ M glucose	1.031	---
10 ⁻³ M glucose + 10 ⁻⁴ M glutamic acid	0.952	-0.079
10 ⁻² M glucose	0.957	---
10 ⁻² M glucose + 10 ⁻³ M glutamic acid	0.962	+0.005
10 ⁻¹ M glucose	0.992	---
10 ⁻¹ M glucose + 10 ⁻² M glutamic acid	0.988	-0.004
10 ⁻³ M glucose	1.239	---
10 ⁻³ M glucose + 10 ⁻⁴ M glutamic acid	1.245	+0.006
10 ⁻² M glucose	1.237	---
10 ⁻² M glucose + 10 ⁻³ M glutamic acid	1.235	-0.002
10 ⁻¹ M glucose	1.233	---
10 ⁻¹ M glucose + 10 ⁻² M glutamic acid	1.229	-0.004
10 ⁻³ M glucose	0.677	---
10 ⁻³ M glucose + 10 ⁻⁴ M leucine	0.753	+0.076
10 ⁻² M glucose	0.738	---
10 ⁻² M glucose + 10 ⁻³ M leucine	0.812	+0.074
10 ⁻¹ M glucose	0.716	---
10 ⁻¹ M glucose + 10 ⁻² M leucine	0.735	+0.019
10 ⁻³ M glucose	0.554	---
10 ⁻³ M glucose + 10 ⁻⁴ M lactate	0.601	+0.047
10 ⁻² M glucose	0.592	---
10 ⁻² M glucose + 10 ⁻³ M lactate	0.63	+0.038
10 ⁻¹ M glucose	0.656	---
10 ⁻¹ M glucose + 10 ⁻² M lactate	0.687	+0.031
10 ⁻³ M glucose	1.083	---
10 ⁻³ M glucose + 10 ⁻⁴ M phenylalanine	1.095	+0.012
10 ⁻² M glucose	1.107	---
10 ⁻² M glucose + 10 ⁻³ M phenylalanine	1.142	+0.035
10 ⁻¹ M glucose	1.07	---
10 ⁻¹ M glucose + 10 ⁻² M phenylalanine	1.091	+0.021

MohammadMostafa-1-DMSO-H1

Archive directory: /export/home/vnmr1/vnmrsys/data
Sample directory: D05mm_test_12Mar2014-21:34:40
File: PROTON

Pulse Sequence: s2pul
Solvent: DMSO
Temp: 30.0 C / 303.1 K
Mercury-3000B "NMR300"

Relax. delay 6.000 sec
Pulse 45.0 degrees
Acq. time 4.000 sec
Width 6600.7 Hz
14 repetitions
OBSERVE H1, 300.0687870 MHz
DATA PROCESSING
Line broadening 0.1 Hz
FT size 65536
Total time 58 min, 55 sec
Date: Oct 6 2021



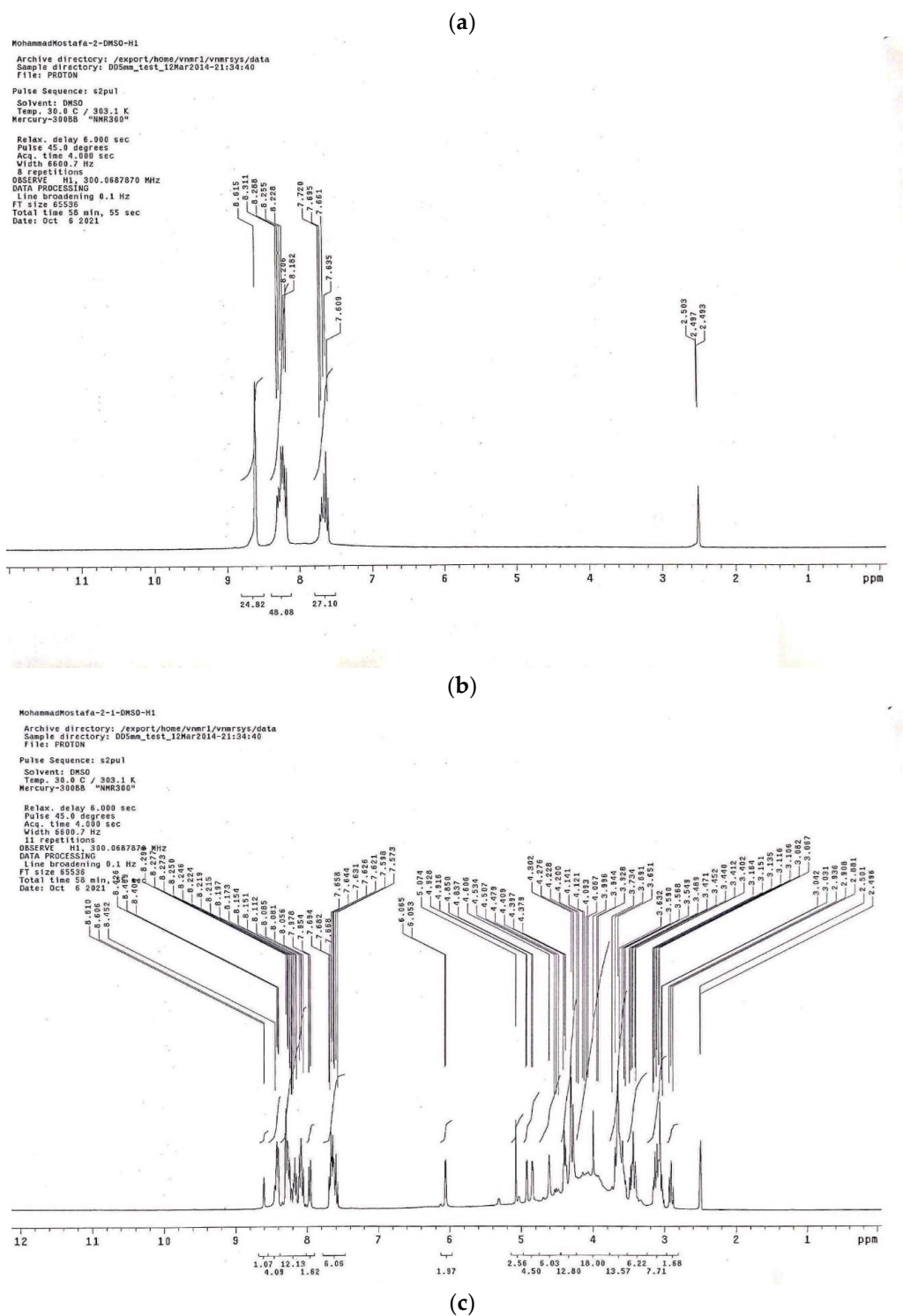


Figure S1. ^1H -NMR spectra of (a) glucose, (b) ionophore-NPBA, and (c) their mixture (glucose-NPBA complex).