

## Easy and Low-cost Chitosan Cryogel-based Colorimetric Biosensor for Detection of Glucose

<b>Publons ID</b>	22607647
<b>Wos ID</b>	WOS:000482991200011
<b>Doi</b>	10.1134/S1061934819090028
<b>Title</b>	Easy and Low-cost Chitosan Cryogel-based Colorimetric Biosensor for Detection of Glucose
<b>First Author</b>	
<b>Last Author</b>	
<b>Authors</b>	Fatoni, A; Anggraeni, MD; Dwiasi, DW;
<b>Publish Date</b>	SEP 2019
<b>Journal Name</b>	JOURNAL OF ANALYTICAL CHEMISTRY
<b>Citation</b>	4
<b>Abstract</b>	<p>A colorimetric biosensor for glucose detection has been studied based on chitosan cryogel supporting material for enzyme immobilization. The detection was based on the glucose conversion to hydrogen peroxide by glucose oxidase, then a titanium(IV) oxysulfate was used to measure hydrogen peroxide, indicated by the formation of yellow color. The color change with the concentration was then recorded by a commercial scanner and analyzed using an ImageJ software. The fabricated biosensor allows to easily prepare by in-tips enzyme immobilization with user-friendly operating using micropipette by the suck-hold-release method for the determination of glucose. Enzyme immobilization has been optimized including the amount of enzyme and the reaction time. The biosensor showed a high operational stability for up to 56 measurements using a single immobilized enzyme, with a wide linear range (0.3 to 3.0 mM glucose), high specificity, and also agreed with the standard method used in hospitals to detect blood glucose (the Wilcoxon signed-rank test, <math>P &gt; 0.05</math>).</p>
<b>Publish Type</b>	Journal
<b>Publish Year</b>	2019
<b>Page Begin</b>	933
<b>Page End</b>	939
<b>Issn</b>	1061-9348
<b>Eissn</b>	1608-3199
<b>Url</b>	<a href="https://www.webofscience.com/wos/woscc/full-record/WOS:000482991200011">https://www.webofscience.com/wos/woscc/full-record/WOS:000482991200011</a>
<b>Author</b>	Ners MEKAR DWI ANGGRAENI, M.Kep, Ph.D