Accepted Manuscript

Title: Machine learning enabled acoustic detection of sub-nanomolar concentration of trypsin and plasmin in solution

Authors: Marek Tatarko, Eric S. Muckley, Veronika Subjakova, Monojoy Goswami, Bobby G. Sumpter, Tibor Hianik, Ilia N. Ivanov



PII:	S0925-4005(18)31007-4
DOI:	https://doi.org/10.1016/j.snb.2018.05.100
Reference:	SNB 24756
To appear in:	Sensors and Actuators B
Received date:	19-2-2018
Revised date:	16-5-2018
Accepted date:	17-5-2018

Please cite this article as: Marek Tatarko, Eric S.Muckley, Veronika Subjakova, Monojoy Goswami, Bobby G.Sumpter, Tibor Hianik, Ilia N.Ivanov, Machine learning enabled acoustic detection of sub-nanomolar concentration of trypsin and plasmin in solution, Sensors and Actuators B: Chemical https://doi.org/10.1016/j.snb.2018.05.100

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

[This manuscript has been authored by UT-Battelle, LLC under Contract No. DE-AC05-00OR22725 with the U.S. Department of Energy. The United States Government retains and the publisher, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, world-wide license to publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes. The Department of Energy will provide public access to these results of federally sponsored research in accordance with the DOE Public Access Plan (http://energy.gov/downloads/doe-public-access-plan).]

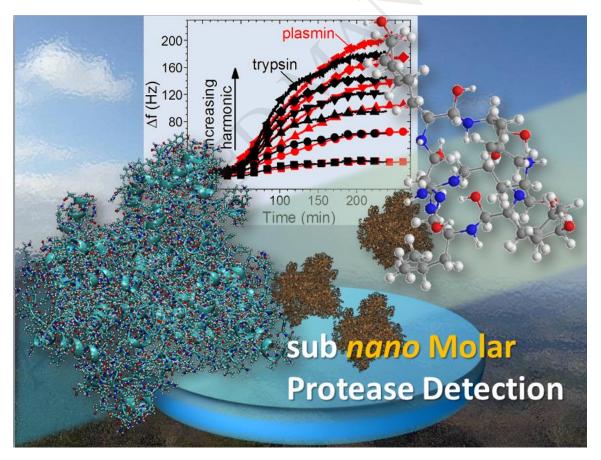
Machine learning enabled acoustic detection of sub-nanomolar concentration of trypsin and plasmin in solution

Marek Tatarko¹, Eric S. Muckley², Veronika Subjakova¹, Monojoy Goswami^{2,3}, Bobby G. Sumpter^{2,3}, Tibor Hianik¹, Ilia N. Ivanov²

¹Faculty of Mathematics, Physics and Informatics, Comenius University, Mlynska dolina, 842 48 Bratislava, Slovakia
²Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6496
³Computational Sciences and Engineering Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6494

*Corresponding author: Ilia Ivanov: ivanovin@ornl.gov

Graphical abstract:



Immobilized β -case exhibits higher response to tryps in than plasmin, which allows sub-nanomolar protease detection and differentiation between tryps in and plasmin after 2 minutes of protease exposure. Shown are case in micelles

Download English Version:

https://daneshyari.com/en/article/7138873

Download Persian Version:

https://daneshyari.com/article/7138873

Daneshyari.com