

## Accepted Manuscript

Title: THE FIRST REPRESENTATIVE OF CATIONIC AMPHIPHILES BEARING THREE UNSATURATED MOIETIES: SELF-ASSEMBLY AND INTERACTION WITH POLYPEPTIDE



Authors: Dinar R. Gabdrakhmanov, Farida G. Valeeva, Darya A. Samarkina, Svetlana S. Lukashenko, Alla B. Mirgorodskaya, Lucia Ya. Zakharova

PII: S0927-7757(18)30993-2  
DOI: <https://doi.org/10.1016/j.colsurfa.2018.09.008>  
Reference: COLSUA 22808

To appear in: *Colloids and Surfaces A: Physicochem. Eng. Aspects*

Received date: 18-6-2018  
Revised date: 26-8-2018  
Accepted date: 5-9-2018

Please cite this article as: Gabdrakhmanov DR, Valeeva FG, Samarkina DA, Lukashenko SS, Mirgorodskaya AB, Zakharova LY, THE FIRST REPRESENTATIVE OF CATIONIC AMPHIPHILES BEARING THREE UNSATURATED MOIETIES: SELF-ASSEMBLY AND INTERACTION WITH POLYPEPTIDE, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (2018), <https://doi.org/10.1016/j.colsurfa.2018.09.008>

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.

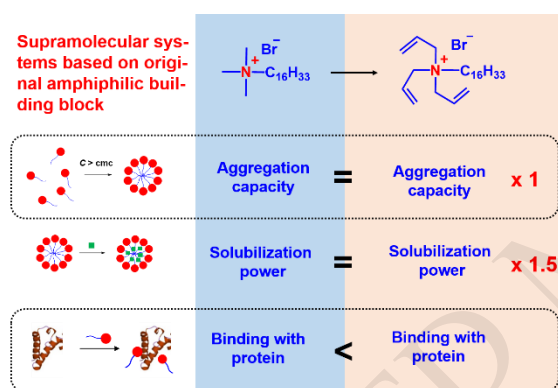
# THE FIRST REPRESENTATIVE OF CATIONIC AMPHIPHILES BEARING THREE UNSATURATED MOIETIES: SELF-ASSEMBLY AND INTERACTION WITH POLYPEPTIDE

Dinar R. Gabdrakhmanov, Farida G. Valeeva, Darya A. Samarkina,  
Svetlana S. Lukashenko, Alla B. Mirgorodskaya, Lucia Ya. Zakharova

*Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific  
Center of RAS  
Arbuzov str. 8, Kazan, 420088 Russian Federation*

Corresponding author: Dinar Gabdrakhmanov; Telephone: +7(843) 2 73 22 93;  
Fax: +7(843) 2 73 22 53; mail address: 8, ul.Akad. Arbuzov, Kazan, 420088,  
Russia; e-mail: dingab@iopc.ru, Nemezc1988@yandex.ru

## Graphical abstract



## Abstract

Novel cationic amphiphile bearing three allyl fragments (hexadecyltriallylammonium bromide, TAS-16) in the headgroup has been synthesized. Using the set of physico-chemical methods its self-assembly properties and functional activity of aggregates has been studied. It has been established, that aggregation behavior of TAS-16 is similar to the well-known analogue of trimethylammonium series – cetyltrimethylammonium bromide (CTAB). In particular, critical micelle concentration for both amphiphiles in aqueous solutions equals 1 mM, hydrodynamic diameters of aggregates of TAS-16 and CTAB are 2-4 nm and its charge characteristics (zeta potential values) are in the range of 70-80 mV. However, practically useful properties of TAS-16 are more significant in comparison with CTAB: solubilizing capacity toward hydrophobic azodye of novel amphiphile is 1.5-fold higher, and its binding capability with bovine serum albumin (BSA) is higher. It has been revealed, that complexation of TAS-16 with BSA is contributed by electrostatic interactions, and the favorable binding site of

Download English Version:

<https://daneshyari.com/en/article/10139783>

Download Persian Version:

<https://daneshyari.com/article/10139783>

[Daneshyari.com](https://daneshyari.com)