

[Available Issues](#) | [Japanese](#)>> [Publisher Site](#)Author: [ADVANCED](#) | Volume Page
Keyword: | [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-2246

PRINT ISSN : 0910-6340

Analytical Sciences

Vol. 26 (2010) , No. 1 p.33

[\[PDF \(6594K\)\]](#) [\[References\]](#)**Suppression of Non-specific Adsorption Using Densified Tri(ethylene glycol) Alkanethiols: Monolayer Characteristics Evaluated by Electrochemical Measurements**[Kyoko YOSHIOKA](#)¹⁾, [Yukari SATO](#)¹⁾, [Mutsuo TANAKA](#)¹⁾, [Teiichi MURAKAMI](#)¹⁾ and [Osamu NIWA](#)¹⁾*1) National Institute of Advanced Industrial Science and Technology (AIST)***(Received October 29, 2009)****(Accepted November 28, 2009)**

Tri(ethylene glycol) terminated short alkylchain thiols (TEGCnSHs) offer good potential for constructing ultra-thin protein-resistant monolayers because they have an alkylchain for forming a densely packed monolayer and a flexible-hydrophilic oligo ethylene glycol arm for avoiding non-specific adsorption. Hybrid monolayers consisting of TEGCnSH and a maltoside ligand (MalC12SH, for capturing lectin) were effective in detecting concanavalin A (Con A). This hybrid monolayer was more suitable for Con A detection than that modified with 100% ligands in terms of the detection limit and time. The anti-fouling properties, packing densities, interaction and homogeneity of TEGCnSH monolayers were confirmed in detail by surface plasmon resonance (SPR) measurements and electrochemical methods. SPR measurements revealed their excellent repellency to proteins and peptides of various sizes (M_w 400 – 104000). The electrochemical results indicated that the lower defects in the TEGCnSH monolayers suppressed the permeation of small peptides. The stability, homogeneity and packing density of the TEGCnSH monolayers were gradually improved as their alkylchain length increased.

[\[PDF \(6594K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

To cite this article:

Kyoko YOSHIOKA, Yukari SATO, Mutsuo TANAKA, Teiichi MURAKAMI and Osamu NIWA, *Anal. Sci.*, Vol. 26, p.33, (2010) .

doi:10.2116/analsci.26.33

JOI JST.JSTAGE/analsci/26.33

Copyright (c) 2010 by The Japan Society for Analytical Chemistry



[Japan Science and Technology Information Aggregator, Electronic](#)

