

Announcements

2015

Oct. 5 - 8

(Yokohama, Japan)

Asia Steel International Conference 2015 (Asia Steel 2015).

Contact: Asia Steel 2015 Secretariat, c/o ISS, INC., Kojimachi 311 Bldg. 9F, 3-1-1 Kojimachi, Chiyoda, Tokyo 102-0083, Japan (e-mail: asiasteel2015@issjp.com; Website: <http://www.asiasteel2015.com/>).

Oct. 25 - 30

(Shimane, Japan)

10th International Symposium on Atomic Level Characterizations for New Materials and Devices '15 (ALC '15).

Contact: Secretary of ALC '15 Steering Committee (e-mail: alc15@jsps141.surf.nuqe.nagoya-u.ac.jp; Website: <https://jsps141.surf.nuqe.nagoya-u.ac.jp/alc15/>).

Nov. 29 - Dec. 2

(Kyoto, Japan)

World Engineering Conference and Convention 2015 (WECC2015).

Contact: Secretariat for WECC2015 (c/o Congress Corp.), Kohsai-Kaikan Bldg., 5-1 Kojimachi, Chiyoda, Tokyo 102-8481, Japan (e-mail: wecc2015-reg@congre.co.jp; Website: <http://www.congre.co.jp/wecc2015/>).

Dec. 2 - 4

(Busan, Korea)

The 36th Symposium on UltraSonic Electronics (USE2015).

Contact: USE2015 Symposium on Ultrasonic Electronics Organizing Committee (e-mail: onodera@iuse.or.jp; Website: <http://use-jp.org/>).

Dec. 15 - 20

(Hawaii, USA)

The International Chemical Congress of Pacific Basin Societies (Pacifichem 2015).

Contact: Pacifichem 2015 Congress Secretariat, c/o American Chemical Society, 1155 16th St. N.W., Washington, D.C. 20036, USA (e-mail: pacifichem@acs.org; Website: <http://www.pacifichem.org/>).

2016

April 3 - 8

(Osaka, Japan)

26th IUPAC International Symposium on Photochemistry.

Contact: Prof. Tetsuro Majima, Chairman, Osaka University (e-mail: majima@sanken.osaka-u.ac.jp; Website: <http://web.apollon.nta.co.jp/iupac2016/>).

*Contact: The Japan Society for Analytical Chemistry, 1-26-2 Nishigotanda, Shinagawa, Tokyo 141-0031, Japan.

BUNSEKI KAGAKU
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We are pleased to announce that Analytical Sciences administers the abstracts of selected papers published in Bunseki Kagaku. Bunseki Kagaku is an article magazine (monthly publication in Japanese) of The Japan Society for Analytical Chemistry. Bunseki Kagaku publishes peer-reviewed original, technical and review articles, analytical data and techno reports that pertain to various aspects of analytical chemistry. The insertion of the abstracts in Analytical Sciences will help readers all over the world to be aware of recent advances in all fields of analytical chemistry.

(The editorial committee of Bunseki Kagaku)

BUNSEKI KAGAKU

Vol. 64 No. 9 September, 2015

Efficient Strategy for Screening Chemical Modifications on Human Serum
Albumin: Use of LC/MS/MS and Differential Analysis Software

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(Received March 13, 2015; Accepted April 9, 2015)

Chemical modifications on proteins can provide significant information about chemical stresses during some physiological events. In this study, we have demonstrated a comprehensive LC/MS/MS-based strategy for screening various chemical modifications of human serum albumin (HSA), the most abundant blood plasma protein. A complementary use of different proteases (trypsin and Glu-C), LC columns (C18 and HILIC), and ion detection modes (positive and negative) improved the number of detected peptides, sequence coverage, and identification of the target modifications. A database search using Mascot or Proteome Discoverer revealed 16 and 13 modifications from HSAs treated by *in vitro* oxidation and nitration, respectively. A commercially available albumin depletion kit was used to clean up HSA from pooled plasma. The database analysis enabled it to find 7 types of 36 modification sites, including Met⁸⁷, Trp²¹⁴, and Cys³⁴ oxidation, and the glycation of Lys⁵²⁵. The differential analysis between the plasma sample and HSA standard using XCMS Online revealed that 13 peptides had more than 3.5-fold changes with $p < 0.05$.

Keywords: mass spectrometry; post-translational modification; albumin; chemical stress; biomarker.

Identification of Rice Cultivars Using Commercial Kits

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(Received September 27, 2014; Accepted April 26, 2015)

As staple food of Japan, rice is widely distributed across the nation. In the event that rice is found at a crime scene, genomic information from a single grain could likely provide strong evidence for use in a criminal investigation. Although identification kits for rice cultivars are already commercially available, their utility in testing samples at a crime scene or in testing trace amounts of samples has not been investigated in sufficient depth. In this study, the performances of various DNA extraction and cultivar discrimination kits when one grain of rice was used were evaluated. Firstly, DNA samples were extracted using three commercial extraction kits from one grain of raw rice and one grain of boiled rice. Secondly, cultivar discrimination using extracted DNA samples was demonstrated using a commercial identification kit (Komebugyou, Kokken Co., Ltd.). The combined use of GM quicker 2 (Nippon Gene Co., Ltd.) and Komebugyou successfully identified all rice cultivars for both raw and boiled rice samples. The cultivar of a rice was also identified by the combined use of GM quicker 2 and Komebugyou when the rice was presented as fried rice, rice noodles, rice bread, and rice chaff. These results indicate that cultivar discrimination by Komebugyou can be applicable to trace amounts of rice products at a crime scene, and is strongly dependent on the DNA extraction kit used prior to discrimination.

Keywords: cultivar discrimination; rice; processed rice products; plant body; commercially available kit.

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Local Redox-cycling-based Electrochemical System for Bioimaging

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Electrochemical imaging has been dramatically developed. Electrochemical imaging can provide images of surface chemical kinetics, and its technique has been used for several applications, such as bioanalysis. Although several electrode array devices have been proposed for electrochemical imaging, it is difficult to incorporate many electrochemical sensors into a simple electrode array device due to the lack of spaces for electrodes. To solve this problem, we developed a novel electrochemical imaging system. In this system, redox cycling is based so as to incorporate many sensors in a chip device. In this review, our strategy of the detection system and device construction are described. Finally, electrochemical bioimaging using the device is described.

Keywords: electrochemical imaging; electrode array device; bioanalysis; redox cycling; bioMEMS.

BUNSEKI KAGAKU Vol. 64, No. 9, pp. 669–678 (2015)

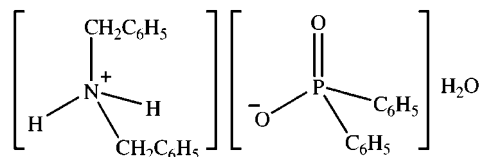
X-ray Structure Analysis Online Vol. 31, Part 8 (pp. 31 - 36)

The Japan Society for Analytical Chemistry's electronic-only journal for the concise crystal structure reports on all classes of compounds. Our webpage, <http://www.jsac.or.jp/cgi-bin/xraystruct/toc/>.

X-ray Struct. Anal. Online, **2015**, *31*, 31.

Synthesis and Crystal Structure of a New Hydrated Phosphate Salt, $[(C_6H_5CH_2)_2NH_2^+][(C_6H_5)_2P(O)(O)]^- \cdot H_2O$

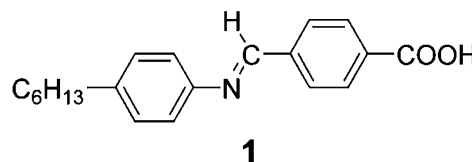
Pari MARANDI, Akbar RAISSI SHABARI, Morteza KHOSRAVI, and Mehrdad POURAYOUBI



X-ray Struct. Anal. Online, **2015**, *31*, 33.

Mesomorphic Property and Crystal Structure of 4-Carboxybenzylidene-4'-hexylaniline

Kanji KUBO, Taisuke MATSUMOTO, Keiko IDETA, and Seiji UJIE



X-ray Struct. Anal. Online, **2015**, *31*, 35.

Crystal Structure of a Copper(II) Complex with *N,N'*-Bis(2-methylquinoly)-dimethyl-1,3-propanediamine

Makoto SAGA, Genta SAKANE, Shigeo YAMAZAKI, and Keiitsu SAITO

