



食品総合研究所研究報告 80号 原著論文

雑誌名	食品総合研究所研究報告
巻	80
ページ	130-164
発行年	2016-03-10
URL	http://id.nii.ac.jp/1578/00002979/

原著論文

Postharvest Biology and Technology, 92, 107-113 (2014)

Effect of active modified atmosphere packaging with different initial gas compositions on nutritional compounds of shiitake mushrooms (*Lentinus edodes*)

Yanjie Li^{*1, *2}, Yutaka Ishikawa^{*2}, Takaaki Satake^{*1}, Hiroaki Kitazawa^{*2}, Xiaoli Qiu^{*1}, Saowaluk Rungchang^{*1}

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Keywords: Modified atmosphere packaging, Shiitake mushroom, Polysaccharide, Phenolic, Free amino acid

Applied Radiation and Isotopes, 87, 485-488 (2014)

Characterization of brown rice as a certified reference material for Fukushima accident-related radioactivity measurements

Yasuhiro Unno^{*1}, Mayumi Hachinohe^{*2}, Shioka Hamamatsu^{*2}, Setsuko Todoriki^{*2}, Akira Yunoki^{*1}, Tsutomu Miura^{*1}

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Keywords: Brown rice, Certified reference material, Cs-134, Cs-137, Fukushima Daiichi Nuclear Power Plant accident
キーワード：玄米，認証標準物質，セシウム134，セシウム137，福島第一原子力発電所事故

Soil Science and Plant Nutrition, 61, 133-143 (2014)

Exchangeable Cs/K ratio in soil is an index to estimate accumulation of radioactive and stable Cs in rice plant

Motohiko Kondo^{*1}, Hideo Maeda^{*1}, Akitoshi Goto^{*1}, Hiroshi Nakano^{*1}, Nobuharu Kiho^{*2}, Tomoyuki Makino^{*2}, Mutsuto Sato^{*3}, Shigeto Fujimura^{*4}, Tetsuya Eguchi^{*4}, Mayumi Hachinohe^{*5}, Shioka Hamamatsu^{*5}, Hirotaka Ihara^{*6}, Toshiyuki Takai^{*1}, Yumiko Arai-Sanoh^{*1}, Takeshi Kimura^{*7}

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Keywords: exchangeable cesium, exchangeable potassium, rice, soil properties, transfer factor
キーワード：交換態セシウム，交換態カリウム，コメ，土質，移行係数

日本食品科学工学会誌, 62(1), 56-62(2015)

乾麺の製麺・調理における放射性セシウムの動態解析

八戸真弓^{*1}, 内藤成弘^{*1}, 明石 肇^{*2}, 等々力節子^{*1}, 松倉 潮^{*1}, 川本伸一^{*1}, 濱松潮香^{*1}

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Keywords: Radioactive cesium, udon, dried noodle, noodle preparation, cooking
キーワード：放射性セシウム，うどん，乾麺，製麺，茹で調理

Journal of Food Protection, 78 (3), 561-566 (2015)

Distribution of radioactive cesium (^{134}Cs plus ^{137}Cs) in rice fractions during polishing and cooking

Mayumi Hachinohe, Tomoya Okunishi, Shoji Hagiwara, Setsuko Todoriki, Shinichi Kawamoto, Shioka Hamamatsu

National Food Research Institute, NARO

Keywords: radioactive cesium, brown rice, polished rice, cooked rice
 キーワード：放射性セシウム，玄米，精米，炊飯米

Cytotechnology, 66 (4), 561-566 (2014)

Green tea catechin induced phagocytosis can be blocked by catalase and an inhibitor of transient receptor potential melastatin 2 (TRPM2)

Monobe Manami*¹, Ema Kaori*¹, Tokuda Yoshiko*¹, Maeda-Yamamoto Mari*²

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*² National Food Research Institute, NARO

Keywords: epigallocatechin, catalase, transient receptor potential melastatin 2 (TRPM2)
 キーワード：エピガロカテキン，カタラーゼ，TRPM2

Bioscience, Biotechnology, and Biochemistry, 78 (5), 806-811 (2014)

Purification and characterization of a novel O-methyltransferase from *Flammulina velutipes*

Kirita Masanobu*¹, Tanaka Yoshihisa*¹, Tagashira Motoyuki*¹, Kanda Tomomasa*¹, Maeda-Yamamoto Mari*²

*¹ Asahi Beer

*² National Food Research Institute, NARO

Keywords: novel O-methyltransferase, enokidake mushroom, characterization
 キーワード：新規メチルトランスフェラーゼ，えのきだけ，特性解明

Bioscience, Biotechnology, and Biochemistry, 78 (7), 1140-1146 (2014)

Metabolic stability and inhibitory effect of O-methylated theaflavins on H_2O_2 -induced oxidative damage in human HepG2 cells

Tanaka Yoshihisa*¹, Kirita Masanobu*¹, Abe Yuko*¹, Miyata Satoshi*¹, Tagashira Motoyuki*¹, Kanda Tomomasa*¹,
 Maeda-Yamamoto Mari*²

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Keywords: O-methylated theaflavins, inhibitory effect on H_2O_2 -induced oxidative damage, HepG2 cells
 キーワード：メチル化テアフラビン，過酸化水素誘導酸化的損傷抑制作用，HepG2細胞

Allergology International, 64 (2), 211-217 (2014)

'Benifuuki' green tea containing O-methylated catechin reduces symptoms of Japanese cedar pollinosis: a randomized, double-blind, placebo-controlled trial

Sawako Masuda*¹, Maeda-Yamamoto Mari*², Satoko Usui*¹, Takao Fujisawa*¹

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*² National Food Research Institute, NARO

Keywords: 'Benifuuki' green tea, O-methylated catechin, reduction of symptoms of pollinosis, randomized placebo-controlled trial
 キーワード：べにふうき緑茶，メチル化カテキン，花粉症状軽減作用，無作為割付並行群間ヒト介入試験

Current Pharmaceutical Design, 20, 892-902 (2014)

Prevention of allergic disease development and symptoms by food factors

Hiroshi Akiyama*¹, Shigeru Katayama*¹, Tomomasa Kanda*², Mari Maeda-Yamamoto*³, Mamoru Totsuka*⁴, Shingo Takahashi*⁵, Toshihiko Shoji*⁶, Takahiro Inakuma*⁵, Soichiro Nakamura*¹

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Keywords: Prevention of allergic disease, apple polyphenol, green tea catechin

キーワード：アレルギー疾患予防, リンゴポリフェノール, 緑茶カテキン

日本食品科学工学会誌, 61(12), 586-591 (2014)

給茶機 RICH+ (リッチプラス) を用いた茶葉中各種健康機能性成分の抽出条件の検討

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Keywords: green tea infuser 'RICH plus', O-methylated catechins, epigallocatechin (EGC), theanine

キーワード：給茶機「リッチプラス」, メチル化カテキン, エピガロカテキン, テアニン

Journal of Bioscience and Bioengineering, 119 (2), 148-152 (2015)

Two transaldolase isogenes from *Moniliella megachiliensis* behave in a different way depending on the stress class

Youshi Iwata*¹, Daiki Mizushima*¹, Yousuke Kobayashi*¹, Tetsuya Ookura*², Jun Ogihara*¹, Jun Kato*¹, Takafumi Kasumi*¹

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Keywords: *Moniliella megachiliensis*, Osmotic stress, Oxidative stress, Polyol, Transaldolase isogene

Food Science and Technology Research, 20 (4), 875-881 (2014)

Simplified Methods for Purification of Peanut Allergic Proteins: Ara h 1, Ara h 2, and Ara h 3.

Keigo Masuyama*¹, Kazutaka Yamamoto*², Kaoru Ito*¹, Eiichi Kitagawa*¹, Kohji Yamaki*²

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*² National Food Research Institute, NARO

Keywords: peanut allergy, purification, Ara h 1-3, ammonium sulfate fractionation (ASF)

Journal of Food Science, 79 (9), C1665-C1671 (2014)

Extraction efficiency of hydrophilic and lipophilic antioxidants from lyophilized foods using pressurized liquid extraction and manual extraction

Jun Watanabe*¹, Tomoyuki Oki*², Jun Takebayashi*³, Yuko Takano-Ishikawa*¹

*¹ National Food Research Institute, NARO

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*³ National Institute of Health and Nutrition

Keywords: antioxidant, extraction, food samples, pressurized liquid extraction, spike-and-recovery

Applied Microbiology and Biotechnology, 99 (10), 4287-4295 (2015)

Identification and distribution of cellobiose 2-epimerase genes by a PCR-based metagenomic approach

Jun Wasaki*¹, Hidenori Taguchi*², Takeshi Senoura*², Hiroshi Akasaka*², Jun Watanabe*³, Kazuki Kawaguchi*⁴, Yosuke Komata*⁴, Kiyotoshi Hanashiro*⁴, Susumu Ito*⁴

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Keywords: metagenome, environmentalDNA, cellobiose 2-epimerase, mannobiose 2-epimerase, mannan catabolism

The Journal of Nutrition, 145 (2), 199-206 (2015)

Wheat alkylresorcinols suppress high-fat, high-sucrose diet-induced obesity and glucose intolerance by increasing insulin sensitivity and cholesterol excretion in male mice

Oishi Katsutaka*¹⁻³, Yamamoto Sorj*¹, Itoh Nanako*¹, Nakao Reiko*¹, Yasumoto Yuki*^{1,3}, Tanaka Keiko*⁴, Kikuchi Yosuke*⁴, Fukudome Shin-ichi*⁴, Okita Kimiko*⁵, Takano-Ishikawa Yuko*⁶

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Keywords: alkylresorcinol, obesity, glucose intolerance, cholesterol absorption, circadian rhythm

キーワード：アルキルレゾルシノール，糖尿病，耐糖能，コレステロール吸収，サーカディアンリズム

Food Chemistry, 161, 176-180 (2014)

Milk prevents the degradation of daikon (*Raphanus sativus* L.) isothiocyanate and enhances its absorption in rats

Katsunari Ippoushi, Hiroshi Ueda, Atsuko Takeuchi

NARO Institute of Vegetable and Tea Science

Keywords: Isothiocyanate, Daikon, Milk, Absorption, Rat

Current Nutrition Reports, 3 (3), 204-212 (2014)

Nutrients, Clock Genes, and Chrononutrition

Hideaki Oike*¹, Katsutaka Oishi*², Masuko Kobori*¹

*¹ National Food Research Institute, NARO

*² Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)

Keywords: Circadian rhythm, Clock genes, Chrono-nutrition, Metabolic disorders, Breakfast

キーワード：概日リズム，時計遺伝子，時間栄養学，代謝異常，朝食

Food Chemistry, 173, 238-242 (2015)

Absolute quantification of protein NP24 in tomato fruit by liquid chromatography/tandem mass spectrometry using stable isotope-labelled tryptic peptide standard

Katsunari Ippoushi, Motoe Sasanuma, Hideaki Oike, Masuko Kobori, Mari Maeda-Yamamoto

National Food Research Institute, NARO

Keywords: Protein NP24, Tomato, Absolute quantification, Liquid chromatography/tandem mass spectrometry, Stable isotope-labelled peptide

Biological & Pharmaceutical Bulletin, 37, 1422-1427 (2014)

Harmine lengthens circadian period of the mammalian molecular clock in the suprachiasmatic nucleus

Kondoh Daisuke*¹, Yamamoto Saori*¹, Tomita Tatsunosuke*¹, Miyazaki Koyomi*¹, Itoh Nanako*¹, Yasumoto Yuki*¹, Oike Hideaki*², Doi Ryosuke*¹, Oishi Katsutaka*¹

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Keywords: carboline alkaloid, circadian clock, PER2::LUC protein, real-time reporter assay, suprachiasmatic nucleus

PLoS One, 9 (5), e98294 (2014)

β -Cryptoxanthin alleviates diet-induced nonalcoholic steatohepatitis by suppressing inflammatory gene expression in mice.

Masuko Kobori*¹, Yinhua Ni*^{2, 3}, Yumiko Takahashi*¹, Natsumi Watanabe*¹, Minoru Sugiura*⁴, Kazunori Ogawa*⁵, Mayumi Nagashimada*², Shuichi Kaneko*³, Shigehiro Naito*¹, Tsuguhito Ota*^{2, 3}

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Keywords: β -cryptoxanthin, nonalcoholic steatohepatitis, inflammation, macrophages, oxidative stress

キーワード: β -クリプトキサニン, 非アルコール性脂肪肝炎, 炎症, マクロファージ, 酸化ストレス

Food Science and Technology Research, 20 (2), 309-316 (2014)

Intestinal bacterium TM-30: an S-equol-producing bacterium isolated from human feces is involved in estrogen metabolism *in vitro*

Motoi Tamura, Sachiko Hori, Hiroyuki Nakagawa

National Food Research Institute, NARO

Keywords: estrone, β -estradiol, S-equol, daidzein, intestinal bacterium

キーワード: エストロン, β -エストラジオール, S-エコール, ダイゼイン, 腸内細菌

Journal of Food Science, 79 (Nr.2), S246-S250 (2014)

Effect of risk information exposure on consumers' responses to foods with insect contamination

Atsushi Kimura*¹, Yukio Magariyama*², Akihiro Miyanoshta*², Taro Imamura*², Kumiko Shichiri*², Tomohiro Masuda*², Yuji Wada*²

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*² National Food Research Institute, NARO

Keywords: consumer perception, food defect, food information, insect contamination, risk communication

日本健康教育学会誌, 22(2), 1-11 (2014)

イラストを用いた食品中の残留農薬量の理解度の検討

朴ソラ*1,*2,*3, 増田知尋*3, 村越琢磨*4, 川崎弥生*5, 内海 建*3, 木村敦*3,*6, 小山慎一*2, 日比野治雄*2, 日野明寛*3,*7, 和田有史*3

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 *6 東京電機大学情報環境学部
 *7 日本製粉株式会社中央研究所

Keywords: risk communication, information design, pesticide residue
 キーワード: リスクコミュニケーション, 情報デザイン, 残留農薬

Appetite, 81, 102-107 (2014)

Scents boost preference for novel fruits

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 *4 National Food Research Institute, NARO

Keywords: Visual-olfactory interaction, Awareness, Edibility, Morphing

Food Quality and Preference 40 (B), 279-286, (2015)

Model of vegetable freshness perception using luminance cues

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 *3 National Food Research Institute, NARO
 *4 Tokyo Denki University

Keywords: Visual freshness perception, Luminance distribution, Image analysis, Statistics; Vegetables

日本味と匂学会誌, 21(3), 157-160 (2014)

マウスリック試験を用いた甘味料の相乗効果評価

河合崇行, 日下部裕子

(独) 農研機構食品総合研究所

Keywords: Mouse, Lick, Sweetener, synergetic effects

PLoS One, 9 (7), e100425 (2014)

Distinct human and mouse membrane trafficking systems for sweet taste receptors T1r2 and T1r3.

Madoka Shimizu*¹, Masao Goto*¹, Takayuki Kawai*¹, Atsuko Yamashita*², Yuko Kusakabe*¹

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*² Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University

Keywords: taste receptor, sweet taste, membrane traffick, species difference

Neurosci Letter, 580, 147-152 (2014)

The glossopharyngeal nerve controls epithelial expression of Sprr2a and Krt13 around taste buds in the circumvallate papilla.

Hirohito Miura*¹, Yuko Kusakabe*², Kento Hashido*², Akihiro Hino*², Makoto Ooki*¹, Shuitsu Harada*¹

*¹ Kagoshima University Graduate School of Medical and Dental Sciences

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Keywords: Taste bud, Taste nerve, Cell differentiation, Taste pore, Precursor cell

The Journal of Biological Chemistry, 289 (37), 25711-25720 (2014)

Molecular mechanisms for sweet-suppressing effect of gymnemic acids.

Keisuke Sanematsu*¹, Yuko Kusakabe*², Noriatsu Shigemura*¹, Takatsugu Hirokawa*³, Seiji Nakamura*¹, Toshiaki Imoto*⁴, Yuzo Ninomiya*⁵

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Keywords: Molecular Evolution, Molecular Modeling, Signal Transduction, Gymnemic Acids, Sweet Taste

Vision Research, 109 (B), 201-208 (2015)

Material perception of a kinetic illusory object with amplitude and frequency changes in oscillated inducer motion

Tomohiro Masuda, Kazuya Matsubara, Ken Utsumi, Yuji Wada

National Food Research Institute, NARO

Keywords: Material perception, Motion perception, Illusory contour

Journal of Texture Studies, 45 (5), 335-343 (2014)

Ultrasound pulsed wave Doppler imaging of the esophagus illustrates the effects of water volume on bolus kinematics

Zhihong Gao, Kaoru Kohyama

National Food Research Institute, NARO

Keywords: Bolus, esophagus, kinematics, ultrasonic pulsed wave Doppler, volume

キーワード：食塊，食道，運動学，超音波パルスドブラ，容量

Food Hydrocolloids, 43, 146-152 (2015)

Electromyographic texture characterization of hydrocolloid gels as model foods with varying mastication and swallowing difficulties

Kaoru Kohyama*¹, Fumiyo Hayakawa*¹, Yukari Kazami*¹, Sayaka Ishihara*², Satomi Nakao*², Takahiro Funami*²,
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Keywords : texture, sensory evaluation, gels, eating difficulty, electromyography
キーワード : テクスチャー, 官能評価, ゲル, 食べにくさ, 筋電位測定法

Journal of Texture Studies, 45 (5), 354-366 (2014)

Instrumental uniaxial compression test of gellan gels of various mechanical properties using artificial tongue and its comparison with human oral strategy for the first size reduction

Sayaka Ishihara*¹, Mai Isono*¹, Satomi Nakao*¹, Makoto Nakauma*¹, Takahiro Funami*¹, Kazuhiro Hori*², Takahiro Ono*³,
Kaoru Kohyama*⁴, Katsuyoshi Nishinari*^{5, *6}

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*⁶ Present Address: School of Food and Pharmaceutical Engineering, Hubei University of Technology

Keywords: artificial tongue, gel fracture, instrumental uniaxial compression, the first size reduction, tongue-palate compression
キーワード : 人工舌, ゲルの破壊, 機器による一軸圧縮, 第一破壊, 舌と口蓋による圧縮

Food Science and Technology Research, 20 (6), 1121-1130 (2014)

Mouthful size effects on mastication effort of various hydrocolloid gels used as food models

Kaoru Kohyama*¹, Fumiyo Hayakawa*¹, Zhihong Gao*¹, Sayaka Ishihara*², Satomi Nakao*², Takahiro Funami*²

*¹ National Food Research Institute, NARO

*² San-Ei Gen F. F. I., Inc.

Keywords: texture, food size, hydrocolloid gels, mastication effort, electromyography
キーワード : テクスチャー, 食品の大きさ, ハイドロコロイドゲル, 咀嚼量, 筋電位測定法

Journal of Texture Studies, 45 (6), 477-486 (2014)

Effects of milling ratio and water-to-rice ratio on mastication effort for cooked rice measured by electromyography

Kaoru Kohyama*¹, Navdeep Singh Sodhi*^{1, *2}, Tomoko Sasaki*¹, Keitaro Suzuki*^{1, *3}

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Keywords: Electromyography, Japonica rice, mastication, milling, texture
キーワード : 筋電位測定法, ジャポニカ米, 咀嚼, 精米, テクスチャー

日本調理科学会誌, 47(6), 330-340(2014)

官能評価による未加熱こめ油の風味のプロファイリング

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*2 ボーソー油脂株式会社

Keywords: rice bran oil, sensory evaluation, time-intensity analysis, flavor, correspondence analysis
キーワード: こめ油, 官能評価, タイム-インテンシティ法, 風味, コレスポネンス分析

Food Chemistry, 157 (6), 229-239 (2014)

Optimising aroma quality in curry sauce products using in vivo aroma release measurements

Jun Hatakeyama*1, James M. Davidson*2, Avinash Kant*2, Takeshi Koizumi*1, Fumiyo Hayakawa*3, Andrew J. Taylor*2

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*3 National Food Research Institute, NARO

Keywords: APCI-MS, MSNose, Fat content, Spices, Flavour matching

Food Science and Technology Research, 20 (3), 555-561 (2014)

Detection of commercially irradiated potatoes by thermoluminescence and photostimulated luminescence analyses

Setsuko Todoriki, Hiromi Kameya, Kimie Saito, Shoji Hagiwara

National Food Research Institute, NARO

Keywords: potatoes, gamma irradiation, analytical detection, TL, PSL

日本きのこ学会誌, 1(22), 19-23(2014)

数種のきのこ粉末の電子スピン共鳴による分析

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*3 株式会社岩出菌学研究所

*4 (独) 農研機構食品総合研究所

*5 愛知学院大学

Keywords: Agaricus blazei, Coprinus comatus, Electron spin resonance (ESR), Grifola gargar, Radicals

Mutation Research, 770, 95-104 (2014)

Genotoxic potential and in vitro tumour-promoting potential of 2-dodecylcyclobutanone and 2-tetradecylcyclobutanone, two radiolytic products of fatty acids

Kohji Yamakage*¹, Hajime Sui*¹, Ryo Ohta*¹, Tomoyasu Toyozumi*¹, Kumiko Kawakami*¹, Hirotaka Matsumoto*¹, Toshitaka Takahashi*¹, Kiyoshi Sasaki*¹, Mayu Ikezumi*¹, Saki Negishi*¹, Keisuke Izumi*², Setsuko Todoriki*³, Kondo Takashi*⁴, Masakazu Furuta*⁵

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Keywords: Radiolytic products, 2-Dodecylcyclobutanone, 2-Tetradecylcyclobutanone, Genotoxicity, Bhas 42 cell-transformation assay, Tumour-promoting effect

食品衛生学雑誌, 55(5), 193-204(2014)

放射線照射した甲殻類（エビおよびカニ）の検知への電子スピン共鳴分光法の適用

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Keywords: electron spin resonance spectroscopy, irradiated food, prawn shrimp, crab
キーワード：電子スピン共鳴分光法, 照射食品, エビ, カニ

食品照射, 49(1), 9-15(2014)

加工食品を対象としたアルキルシクロブタノン法 (EN1785) の性能評価

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Keywords: Irradiated food, 2-dodecylcyclobutanone, 2-tetradecylcyclobutanone, European standard EN1785, Processed food
キーワード：放射線照射食品, 2-ドデシルシクロブタノン, 2-テトラデシルシクロブタノン, ヨーロッパ標準分析法EN1785, 加工食品

Fungal Biology, 118 (4), 402-412 (2014)

A single nucleotide polymorphism in the translation elongation factor 1 α gene correlates with the ability to produce fumonisin in Japanese *Fusarium fujikuroi*

Haruhisa Suga*¹, Miha Kitajima*², Riku Nagumo*², Takao Tsukiboshi*³, Ryuichi Uegaki*³, Takashi Nakajima*⁴, Masayo Kushiro*⁵, Hiroyuki Nakagawa*⁵, Masafumi Shimizu*², Koji Kageyama*⁶, Mitsuro Hyakumachi*²

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*⁵ National Food Research Institute, NARO

*⁶ River Basin Research Center, Gifu University

Keywords: Fungi, Gibberella fujikuroi, Mycotoxin, Rice pathogen, Bakanae disease

Journal of Food Processing and Preservation, 38 (3), 1113-1118 (2014)

Loss of nivalenol during cooking of noodles made from *Fusarium*-infected Japanese soft wheat

Sharif Md. Hossen*¹, Hiroyuki Nakagawa*¹, Hitoshi Nagashima*¹, Hiroshi Okadome*¹, Masayo Kushiro*^{1, *2}

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Keywords: raw noodle, cooked noodle, broth, transfer ratio, nivalenol

Food Control, 40, 193-197 (2014)

Effect of milling on the content of deoxynivalenol, nivalenol and zearalenone in Japanese wheat

Yazhi Zheng*¹, Sharif Md. Hossen*¹, Yuki Sago*¹, Megumi Yoshida*², Hiroyuki Nakagawa*¹, Hitoshi Nagashima*¹, Hiroshi Okadome*¹, Takashi Nakajima*², Masayo Kushiro*^{1, *3}

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*³ Headquarters, NARO

Keywords: wheat, zearalenone, deoxynivalenol, nivalenol, milling

JSM Mycotoxins, 60 (1), 23-27 (2014)

Extraction of a *Fusarium* mycotoxin zearalenone in edible oils

Yazhi Zheng*¹, Hiroyuki Nakagawa*¹, Yuki Sago*¹, Hitoshi Nagashima*¹, Hiroshi Okadome*¹, Masayo Kushiro*^{1, *2}

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Keywords: acetonitrile, HPLC-FLD, oil, recovery, zearalenone

Mycoscience, 56, 301-308 (2015)

The α -oxoamine synthase gene *fum8* is involved in fumonisin B₂ biosynthesis in *Aspergillus niger*

Kiminori Shimizu*¹, Hiroyuki Nakagawa*², Ruiko Hashimoto*³, Daisuke Hagiwara*¹, Yoshiki Onji*⁴, Katsuyoshi Asano*⁴, Susumu Kawamoto*¹, Haruo Takahashi*^{1, *5}, Koji Yokoyama*¹

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Keywords: gene cluster, gene expression, mycotoxin, secondary metabolism

Analytical and Bioanalytical Techniques, 2014 S6, (2014)

Harmonized collaborative validation of a simultaneous and multiple determination method for nivalenol, deoxynivalenol, T-2 toxin, HT-2 toxin, and zearalenone in wheat and barley by liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS)

Hiroyuki Nakagawa*¹, Shigehiro Naito*¹, Yuusuke Kitani*², Yoshinao Ito*², Yoshikazu Aoyama*³, Matsuhisa Koyama*³, Yuusuke Hiejima*⁴, Keisuke Nakamura*⁴, Hiroshi Miyazaki*⁵, Tsuyoshi Morita*⁵, Masayohi Tamura*⁶, Naoki Mochizuki*⁶, Masaru Nakamura*⁷, Yuusuke Seki*⁸, Hisae Kadokura*⁹, Hidaka Ikeda*¹⁰, Tomoko Ishikuro*¹⁰, Yoriko Saito*¹², Miyoko Tajima*¹², Yohsuke Shigemasa*¹³, Kikuko Kasama*¹⁴, Yasuyo Oguma*¹⁴, Yuki Sago*¹, Tetsuhisa Goto*¹⁵, Kazuyuki Hirayae*¹⁶

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*⁵ Tokyo Analysis Center, Japan Grain Inspection Association

*⁶ Research Laboratories for Food Safety Chemistry, Asahi Group Holdings, Ltd.

*⁷ Research & Development Center, Showa Sangyo Co., Ltd.

*⁸ QE (quality exam.) Center, Nisshin Seifun Group Inc.

*⁹ Research Institute, Analysis Center, Kagome Co., Ltd.

*¹⁰ Itabashi Spice Center, S&B Foods, Inc.

*¹¹ R&D Center, Nippon Meat Packers, Inc.

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*¹⁶ National Agricultural Research Center for Kyushu Okinawa Region, NARO

Keywords: LC-MS/MS, harmonized collaborative validation, mycotoxin, wheat, barley

Japanese Journal of Food Chemistry and Safety (日本食品化学学会誌), 21 (3), 173-178 (2014)

Retention of *Fusarium* mycotoxin zearalenone and deoxynivalenol during Japanese soft wheat milling

Masayo Kushiro*¹, Yazhi Zheng*¹, Manasikan Thammawong*¹, Toru Kozawa*², Hiroyuki Nakagawa*¹, Hitoshi Nagashima*¹, Hiroshi Okadome*¹

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*² Tokachi Agriculture Experimental Station, Hokkaido Research Organization (HRO)

Keywords: raw noodle, cooked noodle, broth, transfer ratio, nivalenol

Toxins, 7, 604-620 (2015)

Altered gene expression profiles of wheat genotypes against *Fusarium* head blight

Ayumi Kosaka*¹, Alagu Manickavelu*¹, Daniela Kajihara*^{1, 2}, Hiroyuki Nakagawa*³, Tomohiro Ban*¹

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Keywords: wheat, *Fusarium graminearum*, molecular response, detoxification, local and systemic response

食品総合研究所研究報告, 79, 31-34 (2015)

国産豆腐より分離された腸球菌の特性

細谷幸恵, 大畑由紀子, 川崎 晋, 稲津康弘

(独) 農研機構食品総合研究所

Keywords: enterococci, indicator bacteria of fecal contamination

食品総合研究所研究報告, 79, 25-29(2015)

ワークショップを通じた食品関連事業者等の自主衛生管理手法に関する知識の向上 (第2報)

川崎晋, 持田麻里, 大畑由紀子, 齋藤美枝, 野澤博美, 稲津康弘

(独) 農研機構食品総合研究所

Keywords: food hygiene, workshop, self-inspection A

ベストロジ, 29(2), 49-52(2014)

ナッツ類と乾燥果実類におけるノシメマダラメイガ *Plodia interpunctella* の発育

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Keywords: raw whole almond, shelled macadamia nut, shelled walnut, dried plum, raisins

キーワード: アーモンド, マカデミアナッツ, クルミ, プルーン, レーズン

食品総合研究所報告, 79, 19-24(2015)

茨城県つくば市の屋外でトラップに捕獲された貯穀害虫の記録

古井 聡, 今村太郎, 宮ノ下明大

(独) 農研機構食品総合研究所

Keywords: stored-product insect pest, trap, capture, outdoor, Tsukuba

キーワード: 貯穀害虫, トラップ, 捕獲, 屋外, つくば市

都市有害生物管理, 4(2), 79-82(2014)

ネコおよびインコ用の乾燥ペットフードにおけるノシメマダラメイガ *Plodia interpunctella* 幼虫の発育

宮ノ下明大, 今村太郎, 古井 聡

(独) 農研機構食品総合研究所

Keywords: *Plodia interpunctella*, pet food, larval development, cat, parakeet

キーワード: ノシメマダラメイガ, ペットフード, 幼虫発育, ネコ, インコ

都市有害生物管理, 4(2), 91-96(2014)

10, 11月に野外の性フェロモントラップに捕獲されたノシメマダラメイガおよびタバコシバンムシの個体数
- 関東地方8カ所における2013年の調査 -

宮ノ下明大*1, 佐野俊夫*2

*1 (独) 農研機構食品総合研究所

*2 法政大学生命科学部

Keywords: *Plodia interpunctella*, *Lasioderma serricornis*, sex pheromone trap, outdoor

キーワード: ノシメマダラメイガ, タバコシバンムシ, 性フェロモントラップ, 屋外

ペストロジー, 29(1), 23-24, (2014)

茨城県つくば市において冬季に建物で発見されたマツヘリカメムシ *Leptoglossus occidentalis*

宮ノ下明大*1, 曲山幸生*1

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Keywords: western conifer seed bug, overwintering, adult, alien insect pest, bulding
キーワード: マツヘリカメムシ, 越冬, 成虫, 外来害虫, 建物

都市有害生物管理, 4(2), 59-63(2014)

プラスチックコンテナ内での捕食性カメムシ類によるヒラタコクヌストモドキの個体数抑制効果

石島 力*1,*2, 森本彩佳*1, 今村太郎*1, Pornpip Visarathanonth*3, 宮ノ下明大*1

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*3 タイ農業局

Keyword: *Joppeicus paradoxus*, stored-product insect, *Tribolium confusum*, *Xylocoris flavipes*

キーワード: ホウネンカメムシ, 貯蔵食品害虫, ヒラタコクヌストモドキ, ミナミアシブトハナカメムシ

Journal of Cereal Science, 60 (1), 193-201 (2014)

Moisture distribution in rice grains used for sake brewing analyzed by magnetic resonance imaging

Akemi K. Horigane*1, Keitaro Suzuki*1,*2, Mitsuru Yoshida*1,*3

*1 National Food Research Institute, NARO

*2 NARO Institute of Crop Science

*3 Nippon Veterinary and Life Science University

Keywords: rice grain, moisture distribution, magnetic resonance imaging, sake brewing

Journal of Clinical Biochemistry and Nutrition, 55 (3), 168-173 (2014)

Therapeutic effects of isoflavones on impaired salivary secretion

Koufuchi Ryo*1, Ayako Takahashi*1, Yoh Tamaki*2, Mayumi Ohnishi-Kameyama*3, Hiroko Inoue*1,*4, Ichiro Saito*1

*1 Department of Pathology, Tsurumi University School of Dental Medicine

*2 Department of Health and Welfare Services National Institute of Public Health

*3 National Food Research Institute, NARO

*4 Department of Pharmacotherapy, Nihon Pharmaceutical University

Keywords: isoflavones, dry mouth, estrogen, salivary secretion, reactive oxygen species

日本食品科学工学会誌, 62(2), 62-79(2015)

豚肉に含まれるポリソルベート偽陽性成分の同定と除去

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*2 (独) 農研機構食品総合研究所

Keywords: polysorbate, false-positive compound, pork, phospholipid, solid-phase extraction

The Journal of Antibiotics, 67 (12), 839-842 (2014)

Isolation and structural determination of a new hydrophobic peptide venepeptide from *Streptomyces venezuelae*

Shinya Kodani*¹, Kazuki Sato*¹, Hikaru Hemmi*², Mayumi Ohnishi-Kameyama*²

*¹ National Food Research Institute, NARO

*² Graduate school of Agriculture, Shizuoka University

Keywords: *Streptomyces venezuelae*, hydrophobic peptide, NMR spectrum

分析化学, 63(7), 619-623(2014)

湯通し塩蔵ワカメの安定同位体比と微量元素組成の年次変化及び産地判別の可能性

鈴木彌生子*¹, 國分敦子*², 絵面智宏*², 中山和美*²

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Keywords: $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, trace elements, wakame, geographical origin, interannual variation

キーワード: $\delta^{13}\text{C}$, $\delta^{15}\text{N}$, ワカメ, 産地判別, 年次変化

分析化学, 63(5), 399-403(2014)

窒素安定同位体比測定のためのアミノ酸標準物質の開発

佐藤里恵*¹, 川西英彦*¹, Arndt SCHIMMELMANN*², 鈴木彌生子*³, 力石嘉人*⁴

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*⁴ (独) 海洋研究開発機構

Keywords: amino acids, nitrogen, stable isotope, standards, reference materials

キーワード: アミノ酸, 窒素, 安定同位体比, 標準物質

日本食品科学工学会誌, 61(4), 160-167(2014)

DNA分析および安定同位体比分析によるさくらえび製品の産地判別

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*⁵ (独) 農研機構食品総合研究所

Keywords: Sakuraebi (*Sergia lucens*), geographical origin, DNA analysis, stable carbon isotope ratios, stable nitrogen isotope ratios

キーワード: さくらえび製品, 産地判別, DNA分析, 炭素安定同位体比, 窒素安定同位体比

信州大学農学部AFC報告, 12, 85-90(2014)

長野県塩尻市における閉鎖牛舎での捕獲ツキノワグマの家畜飼料依存度

中下留美子*1,*2, 林 秀剛*2, 岸元良輔*2,*3, 鈴木彌生子*2,*4, 瀧井暁子*2,*5, 泉山茂之*2,*5

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- *2 信州ツキノワグマ研究会
- *3 長野県環境保全研究所
- *4 (独) 農研機構食品総合研究所
- *5 信州大学農学部

Keywords: Asiatic black bear, cattle feed, conflict, feeding habit, stable isotope
 キーワード: 安定同位体比, 家畜飼料, 食性履歴, ツキノワグマ, 被害

オレオサイエンス, 14(7), 275-282(2014)

核酸塩基部位をもつ両親媒性脂質分子が作る多様なナノ構造

岩浦里愛

(独) 農研機構食品総合研究所

Keywords: Amphiphiles, Nanostructures, Nucleic Acids, Self-assembly

Chemical Communications, 50 (66), 9295-9297 (2014)

Accumulation of supramolecular nanoparticles self-assembled from a bola-shaped cytidylic acid-appended fluorescein dye in cell nuclei

Rika Iwaura*1, Kaname Yoshida*2, Mayumi Ohnishi-Kameyama*1

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- *2 Japan Fine Ceramics Center

Keywords: Intracellular delivery, Nanoparticles, Nucleotide, Self-assembly

日本食品工学会誌, 62(1), 41-49(2015)

日本茶の商品情報表示に関する消費者意識の調査と考察

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- *3 静岡県立大学経営情報学部

Keywords: Japanese tea, merchandise information display, Consumer, questionnaire survey, Sensory information
 キーワード: 日本茶, 商品情報表示, 消費者, アンケート調査, 感覚関連情報

Food Chemistry, 174, 163-172 (2015)

A NMR-based, non-targeted multistep metabolic profiling revealed L-rhamnitol as a metabolite that characterised apples from different geographic origins

Satoru Tomita*¹, Tadashi Nemoto*², Yosuke Matsuo*¹, Toshihiko Shoji*³, Fukuyo Tanaka*⁴, Hiroyuki Nakagawa*¹, Hiroshi Ono*¹, Jun Kikuchi*^{5, *6, *7}, Mayumi Ohnishi-Kameyama*¹, Yasuyo Sekiyama*^{1, *7}

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*³ NARO Institute of Fruit Tree Science

*⁴ NARO Agricultural Research Center

*⁵ RIKEN Center for Sustainable Resource Science

*⁶ Graduate School of Medical Life Science, Yokohama City University

*⁷ Graduate School of Bioagricultural Sciences and School of Agricultural Sciences, Nagoya University

Keywords: NMR-based metabolic profiling, Apple, Geographic origin, L-Rhamnitol

日本食品科学工学会誌, 61(11), 548-551 (2014)

微生物技能試験のzスコア計算方法による結果の差異

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(独) 農研機構食品総合研究所

キーワード: microbiology, proficiency testing, 微生物, 技能試験

Microbes and Environments, 30 (1), 51-62 (2015)

Characterization of leaf blade- and leaf sheath-associated bacterial community and assessment of their responses to environmental changes of CO₂, temperature, and nitrogen levels under field conditions

Seishi Ikeda*¹, Takeshi Tokida*², Hirofumi Nakamura*³, Hidemitsu Sakai*², Yasuhiro Usui*², Takashi Okubo*⁴, Kanako Tago*², Kentaro Hayashi*², Yasuyo Sekiyama*⁵, Hiroshi Ono*⁵, Satoru Tomita*⁵, Masahito Hayatsu*², Toshihiro Hasegawa*² and Kiwamu Minamisawa*⁴

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*² National Institute for Agro-Environmental Sciences

*³ Taiyo-Keiki Co., Ltd

*⁴ Graduate School of Life Sciences, Tohoku University

*⁵ National Food Research Institute, NARO

Keywords: FACE, nitrogen, *Planctomycetes*, rice phyllosphere, temperature

Journal of Near Infrared Spectroscopy, 22 (1), 11-17 (2014)

Feasibility of rapid in vitro estimation of haematocrit in cattle by using short-wavelength near infrared spectroscopy

Akifumi Ikehata*¹, Xuan Luo*¹, Kunio Sashida*², Shanji Park*², Tsutomu Okura*², Yutaka Terada*³

*¹ National Food Research Institute, NARO

*² Soma Optics, LTD

*³ National Institute of Animal Health, NARO

Keywords: haematocrit, cattle blood, short-wavelength near infrared spectroscopy

キーワード: ヘマトクリット, 牛血液, 短波長近赤外分光法

Applied Spectroscopy, 68 (10), 1181-1189 (2014)

Near-infrared (NIR) study of hydrogen bonding of methanol molecules in polar and nonpolar solvents: an approach from concentration-dependent molar absorptivity

Yuho Mikami*¹, Akifumi Ikehata*², Chihiro Hashimoto*³, Yukihiko Ozaki*¹

*¹ School of Science, Kwansai Gakuin University

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*³ Niihama National College of Technology

Keywords: Near-infrared, hydrogen bonding, methanol, polar and nonpolar solvents, MCR

キーワード: 近赤外, 水素結合, メタノール, 極性溶媒, 無極性溶媒, MCR

Applied Physics Letters, 106, 011905 (2015)

Surface plasmon sensors on ZnO:Ga layer surfaces: Electric field distributions and absorption-sensitivity enhancements

Hiroaki Matsui*¹, Akifumi Ikehata*², Hitoshi Tabata*¹

*¹ Electrical Engineering and Information Systems, The University of Tokyo

*² National Food Research Institute, NARO

Keywords: Surface plasmon sensor, ZnO:Ga, absorption-sensitivity enhancements

キーワード: 表面プラズモン共鳴センサー, ZnO:Ga, 吸収感度増強

日本防菌防黴学会誌, 42, 55-61 (2014)

食品中の真菌数の迅速測定法の検討

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*³ NPO 法人カビ相談センター

Keywords: Fungi, Yeast & Mold, Rapid Method, Safety factor, Incubation time

キーワード: 真菌, 酵母・カビ, 短縮法, 安全率, 培養時間

JSM Mycotoxins, 64 (1), 15-21 (2014)

Determination of aflatoxin M1 in powdered formula: an inter-laboratory study and the surveillance in Japan

Hisako SAKUMA*¹, Yoshiko SUGITA-KONISHI*², Toshitsugu TANAKA*³, Toshihiro NAGAYAMA*⁴, Shigehiro NAITO*⁵, Masakazu HORIE*⁶, Eiichi ISHIKURO*⁷, Masahiro NAKAJIMA*⁸, Tomoya YOSHINARI*¹, Hiroshi KAWAKAMI*⁹

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*⁴ Meiji Pharmaceutical University

*⁵ National Food Research Institute, NARO

*⁶ Otsuma Women's University

*⁷ Japan Scientific Feeds Association

*⁸ Nagoya City Public Health Research Institute

*⁹ Kyoritsu Women's University

Keywords: Aflatoxin M1, Inter-laboratory study, Liquid milk, Powdered formula, Surveillance

キーワード: アフラトキシシン M1, 室間共同試験, 液体ミルク, 粉ミルク, サーベイランス

Journal of AOAC International, 97 (3), 913-920 (2014)

Interlaboratory study of immunochromatography for the rapid determination of cadmium concentrations in cereals and soybeans

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*² Sumika Chemical Analysis Service, Ltd

*³ National Food Research Institute, NARO

Keywords: Cadmium, Cereals, Soybean, Immunochromatography, Interlaboratory study

キーワード：カドミウム、穀類、大豆、イムノクロマトグラフィー、室間共同試験

Food Chemistry, 168, 294-301 (2015)

Effects of polishing, cooking, and storing on total arsenic and arsenic species concentrations in rice cultivated in Japan

Shigehiro Naito*¹, Eri Matsumoto*², Kumiko Shindoh*¹, Tsutomu Nishimura*²

*¹ National Food Research Institute, NARO

*² Japan Food Research Laboratories

Keywords: Rice, Total arsenic, Inorganic arsenic, Polishing, Washing, Cooking, Storage

キーワード：コメ、総ヒ素、無機ヒ素、とう精、洗米、調理、貯蔵

食品総合研究所研究報告, 79, 47-56 (2015)

ひじき粉末中の総ヒ素、カドミウム、鉛及び必須無機元素の2008年度技能試験結果

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*¹ (独) 農研機構食品総合研究所

*² (独) 産総研計量標準総合センター

Keywords: Proficiency testing, Hijiki seaweed, Total arsenic, Cadmium, Lead, Essential inorganic elements

キーワード：技能試験、ひじき、総ヒ素、カドミウム、鉛、必須無機元素

Japanese Journal of Food Chemistry and Safety, 21 (1), 48-56 (2014)

Development of pBT63, a positive control plasmid for qualitative detection of genetically modified rice

Yasukata Minegishi*^{1,2}, Junichi Mano*³, Reona Takabatake*³, Kosuke Nakamura*⁴, Kazunari Kondo*⁴, Yasuo Kato*², Kazumi Kitta*³, Hiroshi Akiyama*⁴

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*³ National Food Research Institute, NARO

*⁴ National Institute of Health Sciences

Keywords: positive control plasmid, restriction enzyme, contamination, genetically modified, qualitative PCR

Food Chemistry, 168, 606-614 (2014)

Multiplex comparison of the digestibility of allergenic and non-allergenic proteins in rice grains by in vitro digestion

Gang-hua Lang, Yukari Kagiya, Kazumi Kitta

National Food Research Institute, NARO

Keywords: Rice protein, Digestibility, Allergenic protein, Multiplex immunodetection

Food Control, 50, 949-955 (2015)

Comparison of the specificity, stability, and PCR efficiency of six rice endogenous sequences for detection analyses of genetically modified rice

Reona Takabatake*¹, Mari Onishi*², Satoshi Futo*², Yasutaka Minegishi*³, Akio Noguchi*⁴, Kosuke Nakamura*⁴, Kazunari Kondo*⁴, Reiko Teshima*⁴, Junichi Mano*¹, Kazumi Kitta*¹

*¹ National Food Research Institute, NARO

*² FASMAC Co., Ltd.

*³ NIPPON GENE Co., Ltd.

*⁴ National Institute of Health Sciences

Keywords: Rice, Endogenous, Genetically Modified, Detection, PCR

Food Hygiene and Safety Science, 55 (5), 205-209 (2014)

Development and validation of an event-specific quantitative PCR method for genetically modified maize MIR162

Reona Takabatake*¹, Tomoko Masubuchi*¹, Satoshi Futo*², Yasutaka Minegishi*³, Akio Noguchi*⁴, Kazunari Kondo*⁴, Reiko Teshima*⁴, Takeyo Kurashima*¹, Junichi Mano*¹, Kazumi Kitta*¹

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*² FASMAC Co., Ltd.

*³ NIPPON GENE Co., Ltd.

*⁴ National Institute of Health Sciences

Keywords: MIR162, event-specific, genetically modified (GM), real-time PCR, maize

Analytical Chemistry, 86 (17), 8621-8627 (2014)

Development of a reference material of a single DNA molecule for the quality control of PCR testing

Junichi Mano*¹, Shuko Hatano*², Satoshi Futo*², Junji Yoshii*³, Hiroki Nakae*³, Shigehiro Naito*¹, Reona Takabatake*¹, Kazumi Kitta*¹

*¹ National Food Research Institute, NARO

*² FASMAC Co., Ltd.

*³ Japan Micro Array Consortium

Keywords: DNA, Single molecule, Reference material, PCR

European Food Research and Technology, 240 (2), 413-422 (2015)

A novel trait-specific real-time PCR method enables quantification of genetically modified (GM) maize content in ground grain samples containing stacked GM maize

Akio Noguchi*¹, Hiroshi Akiyama*¹, Kosuke Nakamura*¹, Kozue Sakata*¹, Yasutaka Minegishi*², Junichi Mano*³, Reona Takabatake*³, Satoshi Futo*⁴, Kazumi Kitta*³, Reiko Teshima*¹, Kazunari Kondo*¹, Tomoko Nishimaki-Mogami*¹

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*² NIPPON GENE Co., Ltd.

*³ National Food Research Institute, NARO

*⁴ FASMAC Co., Ltd.

Keywords: Genetically modified maize, qPCR, Trait-specific method, Stacked GM maize

食品総合研究所研究報告, 79, 35-39 (2015)

Purification of Dehydrin Protein from Buckwheat Seed (*Fagopyrum esculentum* cv. Kitawase)

Michiko Momma

National Food Research Institute, NARO

Keywords: dehydrin, group2 LEA protein, buckwheat, 16kDa pepsin resistant protein

LWT-Food Science and Technology, 58, 222-229 (2014)

Effect of oxygen absorber on accumulation of free fatty acids in brown rice and whole grain wheat during storage

Wakako Tsuzuki*¹, Yasuhiro Suzuki*², Sumiyo Yamada*¹, Shuuichi Kano*³, Hideo Ohnishi*⁴, Takeshi Fujimoto*⁴, Akira Horigane*¹

*¹ National Food Research Institute, NARO

*² National Institute of Crop Science, NARO

*³ TAKACHIHO SEIKI CO. LTD.

*⁴ Nihon BUCHI K.K.

Keywords: Brown rice, Whole grain wheat, Lipid degradation, Oxygen absorber, Storage

キーワード: 玄米, 小麦全粒粉, 脂質劣化, 脱酸素剤, 貯蔵

北陸作物学会報, (49), 62-64 (2014)

低タンパク質含有率の硬質小麦を用いたごはんパンにおける低アミロース・糯水稻品種の製パン適性について

細井 淳*¹, 相澤淳平*², 奥西智哉*³

*¹ 長野県農業試験場

*² 長野県工業技術総合センター

*³ (独) 農研機構食品総合研究所

キーワード: 硬質小麦, ごはんパン, 低アミロース, 製パン

育種学研究, 16(4), 139-146 (2014)

日本のイネ主要品種におけるmPing挿入多型

岸根雅宏, 奥西智哉

(独) 農研機構食品総合研究所

Keywords: mPing, transposon, cultivar identification, rice

Bioresource Technology, 172, 413-417 (2014)

Candida utilis assimilates oligomeric sugars in rice straw hydrolysate via the Calcium-Capturing-by-Carbonation (CaCCO) process for glutathione- and cell-biomass production

Yoshiyuki Koyama, Rui Zhao, Masakazu Ike, Ken Tokuyasu

National Food Research Institute, NARO

Keywords: *Candida utilis*, Rice straw, Cell biomass, Glutathione, Oligosaccharides

食品総合研究所研究報告, 79, 9-17(2014)

Effect of sorghum flour on glutathione-rice bread

Hiroyuki Yano, Akiko Fukui

National Food Research Institute, NARO

Keywords: Bread, Glutathione, Gluten-free, Rice bread, Sorghum

Journal of Lipid Research, 56 (2), 449-462 (2015)

A 3-hydroxy β -end group in xanthophylls is preferentially oxidized to a 3-oxo ϵ -end group in mammals.

Akihiko Nagao^{*1}, Takashi Maoka^{*2}, Hiroshi Ono^{*1}, Eiichi Kotake-Nara^{*1}, Miyuki Kobayashi^{*1}, Mie Tomita^{*1}

^{*1} National Food Research Institute, NARO

^{*2} Research Institute for Production and Development

Keywords: keto-carotenoid, liver, mouse, oxidation, metabolism

Separation Science and Technology, 49 (15), 2289-2302 (2014)

Effect of pH condition on the retention of oleuropein in aqueous solution by nanofiltration membrane

Ilyes Dammak^{*1}, Marcos A. Neves^{*1}, Hiroshi Nabetani^{*2}, Hiroko Isoda^{*2}, Sami Sayadi^{*3}, Mitsutoshi Nakajima^{*1, *2}

^{*1} Graduate School of Life and Environmental Sciences, University of Tsukuba

^{*2} National Food Research Institute, NARO

^{*3} Environmental Bioprocess Laboratory, Center of Biotechnology of Sfax

Keywords: mass transport, nanofiltration, oleuropein, pH effect, rejection
 キーワード：物質移動, ナノろ過, オレウロペイン, pH効果, 阻止

Food Science and Technology Research, 20 (2), 485-491 (2014)

A Mixture of Histidine-Dipeptides, Vitamin C, and Ferulic Acid Reduces Comet Assay Scores in Normal Middle-Aged Men.

Nobuya Yanai^{*1, *3}, Tomoyuki niitsuma^{*2}, Shigenobu shiotani^{*3}, Shoji Hagiwara^{*1}, Hiroshi nabetani^{*1}

^{*1} National Food Research Institute, NARO

^{*2} Third Department of Internal Medicine, School of Medicine, Tokyo Medical University

^{*3} Research Division, Tokai Bussan Co., Ltd.

Keywords: histidine-dipeptides, vitamin C, ferulic acid, antioxidant combination, comet assay, reactive oxygen species (ROS)
 キーワード：ヒスチジン-ジペプチド, ビタミンC, フェルラ酸, 抗酸化物質の組合せ, コメット・アッセイ, 活性酸素

Food and Bioproducts Processing, 94, 342-353 (2015)

Transport properties of oleuropein through nanofiltration membranes

Ilyes Dammak^{*1}, Marcos A. Neves^{*1}, Hiroshi Nabetani^{*2}, Sami Sayadi^{*3}, Mitsutoshi Nakajima^{*1, *2}

^{*1} Graduate School of Life and Environmental Sciences, University of Tsukuba

^{*2} National Food Research Institute, NARO

^{*3} Environmental Bioprocess Laboratory, Center of Biotechnology of Sfax

Keywords: Nanofiltration, Concentration polarization, Osmotic pressure, Oleuropein, Flux decline
 キーワード：ナノろ過, 濃度分極, 浸透圧, オレウロペイン, 流束低下

Procedia Chemistry, 9, 182-193 (2014)

Reactivity of palm fatty acids for the non-catalytic esterification in a bubble column reactor at atmospheric pressure

Joelianingsih*¹, Armansyah H Tambunan*², Hiroshi Nabetani*³

*¹ Chemical Engineering Study Program, Institut Teknologi Indonesia

*² Graduate School, Agricultural Engineering Science, Bogor Agricultural University

*³ National Food Research Institute, NARO

Keywords: Fatty acids, methyl esterification, biodiesel, non-catalytic, superheated methanol

キーワード：脂肪酸, メチルエステル化, バイオディーゼル, 無触媒, 過熱メタノール

食品総合研究所研究報告, 79, 57-66 (2015)

食品害虫サイト用に開発したアクセス解析プログラムとそのツール化

曲山幸生, 七里与子, 宮ノ下明大, 今村太郎, 古井 聡, 和田有史, 増田知尋

(独) 農研機構食品総合研究所

Keywords: Access Analysis, Food-Insect Site, Radiation-Influence Site, Access Behavior, Website Operation

キーワード：アクセス解析, 食品害虫サイト, 放射線影響サイト, アクセス行動, ウェブサイト運営

日本食品工学会誌, 15(1), 25-35 (2014)

水蒸気-水二相バイングによる流動層造粒における加水量削減技術の開発

五月女 格*¹, 井上孝司*², 片桐孝夫*², 竹内博一*³, 津田升子*¹, 岡留博司*¹, 五十部誠一郎*⁴

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*⁴ 日本大学生産工学部

Keywords: agglomeration, droplets evaporation, gas-liquid two-phase flow, water soluble powder

Cereal Chemistry, 91 (5), 419-424 (2014)

Variation in firmness of whole beans, embryos, and testas of cooked soybean (Glycine max) cultivars

Takeshi Yasui*¹, Tomoko Sasaki*², Kaoru Kohyama*², Makita Hajika*¹

*¹ Institute of Crop Science, NARO

*² National Food Research Institute, NARO

Keywords: Soybean, Firmness, Embryo, Testa

Starch, 67 (5-6), 415-423 (2015)

In vitro starch digestibility and in vivo glucose response of gelatinized potato starch in the presence of non-starch polysaccharides

Tomoko Sasaki, Itaru Sotome, Hiroshi Okadome

National Food Research Institute, NARO

Keywords: Potato starch, Starch digestibility, Non-starch polysaccharides, Viscosity, Glucose response

日本食品科学工学会誌, 61(3), 127-133(2014)

高アミロース米の機械的攪拌ゲル化処理を利用した米麺加工法の開発

松山信悟*2, 柴田真理朗*1, 杉山純一*1, 藤田かおり*1, 葛 瑞樹*1, 吉村正俊*1, 粉川美踏*2, 平野由香里*2, 荒木徹也*2, 鍋谷浩志*1

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*2 東京大学

Keywords: 高アミロース米, ゲル化, 米麺, 動的粘弾性, 破断試験

農業情報研究, 23(2), 49-58(2014)

光学的手法に基づく「もち米」の胴割れ検知に関する基礎的研究

吉村正俊*1, 葛 瑞樹*1, 杉山純一*1, 笠井 康*2, 粉川美踏*3, 藤田かおり*1, 柴田真理朗*1

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*2 ケット科学研究所

*3 東京大学

Keywords: もち米, 玄米, 胴割, 拡散反射, 分光イメージング, 品質評価

日本食品工学会誌, 15(3), 157-164(2014)

フローサイトメトリーと多変量解析による緑茶飲料中の大腸菌数推定

葛 瑞樹*1, 佐々木康彦*2, 竹内郁雄*2, 中本英樹*2, 石川 淳*2, 川崎 晋*1, 杉山純一*1, 藤田かおり*1, 吉村正俊*1, 柴田真理朗*1, 粉川美踏*1

*1 (独) 農研機構食品総合研究所

*2 (株) 日立パワーソリューションズ

Keywords: Chemometrics, Patial Least Squares Regression, Escherichia coli, Culture method

Postharvest Biology and Technology, 91, 39-48 (2014)

Spatially resolved diffuse reflectance in the visible and near-infrared wavelength range for non-destructive quality assessment of 'Braeburn' apples

Nghia Nguyen Do Trong*2, Chyngyz Erkinbaev*2, Mizuki Tsuta*1, Josse De Baerdemaeker*2, Bart Nicolai*2, Wouter Saeys*2

*1 National Food Research Institute, NARO

*2 Katholieke Universiteit Leuven

Keywords: SRS, NIR, Fruit, Structure

Innovative Food Science & Emerging Technologies, 21, 160-168 (2014)

Optical properties-microstructure-texture relationships of dried apple slices: Spatially resolved diffuse reflectance spectroscopy as a novel technique for analysis and process control

Nghia Nguyen Do Trong*2, Anna Rizzolo*3, Els Herrernans*2, Maristella Vanoli*3, Giovanna Cortellino*3, Chyngyz Erkinbaev*2, Mizuki Tsuta*1, Lorenzo Spinelli*4, Davide Contini*5, Alessandro Torricelli*5, Pieter Verboven*2, Josse De Baerdemaeker*2, Bart Nicolai*2, Wouter Saeys*2

*1 National Food Research Institute, NARO

*2 Katholieke Universiteit Leuven

*3 CRA-IAA

*4 Istituto di Fotonica e Nanotecnologie

*5 Politecnico di Milano

Keywords: SRS, Fruit, Structure, Texture

Food and Bioprocess Technology, DOI 10.1007/s11947-014-1410-y (2014)

Visualization of Gluten, Starch, and Butter in Pie Pastry by Fluorescence Fingerprint Imaging

Mito Kokawa*^{1, *2}, Naoto Yokoya*³, Hiroko Ashida*⁴, Junichi Sugiyama*¹, Mizuki Tsuta*¹, Masatoshi Yoshimura*^{1, *2}, Kaori Fujita*¹, Mario Shibata*^{1, *2}

*¹ National Food Research Institute, NARO

*² Japan Society for the Promotion of Science

*³ The University of Tokyo

*⁴ Fuji Oil Co., Ltd

Keywords: Gluten, Starch, Butter, Imaging, Fluorescence, Fingerprint

Bioscience, Biotechnology, and Biochemistry, 79 (4), 652-657 (2015)

Method of determining the optimal dilution ratio for fluorescence fingerprint of food constituents

Vipavee Trivittayasil, Mizuki Tsuta, Mito Kokawa, Masatoshi Yoshimura, Junichi Sugiyama, Kaori Fujita, Mario Shibata

National Food Research Institute, NARO

Keywords: Excitation-emission matrix, Principal component analysis, Concentration multivariate analysis

Food and Bioprocess Technology, 7 (12), 3455-3465 (2014)

Nondestructive hygiene monitoring on pork meat surface using excitation-emission matrices with two-dimensional savitzky-golay second-order differentiation

Hiroaki Shirai*², Seiichi Oshita*², Yoshio Makino*², Junichi Sugiyama*¹, Masatoshi Yoshimura*¹

*¹ National Food Research Institute, NARO

*² University of Tokyo

Keywords: Nondestructive detection, Fluorescence spectroscopy, NAD(P)H, PLSR, Second derivative

Foodborne Pathogens and Disease, 11 (4), 332-334 (2014)

Large-scale gaseous acetic acid treatment to disinfect alfalfa seeds inoculated with *Escherichia coli*

Daisuke Nei*¹, Katsuyoshi Enomoto*², Kazutaka Yamamoto*¹

*¹ National Food Research Institute, NARO

*² Daisey Machinery Co. Ltd.

Keywords: *Escherichia coli*, acetic acid, sprout, alfalfa seeds

Postharvest Biology and Technology, 96, 118-127 (2014)

Modeling of the respiration rate and gene expression patterns of cabbage in response to mechanical impact stress using a modified Weibull distribution

Manasikan Thammawong*¹, Takahiro Orihara*², Hitomi Umehara*¹, Ilmi Ganga Namali Hewajulige*³, Tomoko Kaneta*⁴, Nobutaka Nakamura*¹, Yasuhiro Ito*¹, Kohei Nakano*⁵, Takeo Shiina*¹

*¹ National Food Research Institute, NARO

*² Faculty of Agriculture, Iwate University

*³ Industrial Technology Institute

*⁴ Tokushima Prefectural Agriculture, Forestry, and Fisheries Technology Support Center

*⁵ Faculty of Applied Biological Sciences, Gifu University

Keywords: Cabbage, Gene expression, Postharvest mechanical stress, Weibull distribution model

Journal of Food Protection, 78 (1), 104-110 (2015)

Comparison of Desiccation Tolerance among *Listeria monocytogenes*, *Escherichia coli* O157:H7, *Salmonella enterica*, and *Cronobacter sakazakii* in Powdered Infant Formula

Shigenobu Koseki*¹, Nobutaka Nakamura*², Takeo Shiina*²

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*² National Food Research Institute, NARO

Keywords: *Escherichia coli* O157:H7, *Salmonella enterica*, *Cronobacter sakazakii*, Powdered Infant

日本水産学会誌, 81(1), 97-106(2015)

魚醤油発酵時のヒスタミン蓄積に関わる原因菌の同定および乳酸菌発酵スターター接種によるヒスタミン蓄積抑制効果について

木村メイコ*¹, 舊谷亜由美*¹, 福井洋平*¹, 柴田由起*², 根井大介*³, 矢野 豊*⁴, 里見正隆*¹

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*⁴ (独) 水産総合研究センター北海道区水産研究所

キーワード: ヒスタミン, 魚醤油, 乳酸菌

日本包装学会誌, 23(4), 277-285(2014)

蓄積疲労を考慮した青果物のための新たな損傷予測理論の構築 (第2報)
—多段積み包装されたイチゴ果実の損傷発生に及ぼす繰り返し衝撃の影響—

北澤裕明*^{1, 2}, 斎藤勝彦*²

*¹ (独) 農研機構食品総合研究所

*² 神戸大学大学院海事科学研究科

Keywords: peak acceleration, repetitive shock, stacked packaging, velocity change

キーワード: ピーク加速度, 繰り返し衝撃, 多段積み包装, 速度変化

Journal of Food, Agriculture & Environment, 12 (3-4), 46-50 (2014)

Improving the layout of ventilation ports in packaging for fresh produce using computational fluid dynamics

Hiroaki Kitazawa, Naoko Hasegawa

National Food Research Institute, NARO

Keywords: Computational fluid dynamics (CFD), fresh produce, packaging, ventilation port

キーワード: 数値流体力学 (CFD), 青果物, 包装, 通気孔

Scientia Horticulturae, 178 (*), 211-216 (2014)

Changing oxygen concentration around the rootstock alters spear elongation and sprouting of white asparagus

Hiroaki Kitazawa*¹, Naoko Hasegawa*¹, Machiko Fukuda*², Shin-ichi Watanabe*³, Atsushi Yamasaki*⁴, Atsuko Uragami*²

*¹ National Food Research Institute, NARO

*² NARO Institute of Vegetable and Tea Science

*³ NARO Kyushu Okinawa Agricultural Research Center

*⁴ NARO Tohoku Agricultural Research Center

Keywords: *Asparagus officinalis* L., controlled atmosphere, growth regulation, O₂ concentration, spear elongation

キーワード: アスパラガス, ガス環境制御, 成長調節, 酸素濃度, 若茎伸長

Food & Functions, 5 (8), 1839-1847 (2014)

PIV and CFD studies on analyzing intragastric flow phenomena induced by peristalsis using a human gastric flow simulator

Hiroyuki Koza^{*1, *3}, Isao Kobayashi^{*1}, Marcos A. Neves^{*1-^{*3}}, Mitsutoshi Nakajima^{*1-^{*3}}, Kunihiko Uemura^{*1}, Sosaku Ichikawa^{*1, *3}

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^{*2} Alliance for Research on North Africa, University of Tsukuba

^{*3} Graduate School of Life and Environmental Sciences, University of Tsukuba

Keywords: PIV, CFD, Gastric peristalsis, Intragastric flow

キーワード：粒子画像流速測定法, 数値流体力学, 胃ぜん動運動, 胃内流動

Colloids and Surfaces A: Physicochemical and Engineering Aspects, 466, 66-74 (2014)

Stability of monodisperse clove oil droplets prepared by microchannel emulsification

Nanik Purwanti^{*1, *2}, Marcos A. Neves^{*1, *3}, Kunihiko Uemura^{*1}, Mitsutoshi Nakajima^{*1, *3}, Isao Kobayashi^{*1}

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^{*3} Faculty of Life and Environmental Sciences, University of Tsukuba

Keywords: Clove oil, Stability, Oil-in-water emulsion, Microchannel emulsification

キーワード：丁香油, 安定性, 水中油滴エマルション, マイクロチャネル乳化

Colloids and Surfaces A: Physicochemical and Engineering Aspects, 458, 69-77 (2014)

Monodisperse W/O/W emulsions encapsulating L-ascorbic acid: Insights on their formulation using microchannel emulsification and stability studies

Nauman Khalid^{*1, *2}, Isao Kobayashi^{*1}, Marcos A. Neves^{*1, *3}, Kunihiko Uemura^{*1}, Mitsutoshi Nakajima^{*1, *3}, Hiroshi Nabetani^{*1, *2}

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^{*2} Graduate School of Agricultural and Life Sciences, The University of Tokyo

^{*3} Faculty of Life and Environmental Sciences, University of Tsukuba

Keywords: Microchannel emulsification, Water-in-oil-in-water emulsions, Monodisperse droplets, L-ascorbic acid, Emulsifier concentration

キーワード：マイクロチャネル乳化, W/O/W エマルション, 単分散微小液滴, L-アスコルビン酸, 乳化剤濃度

Colloids and Surfaces A: Physicochemical and Engineering Aspects, 459 (5), 247-253 (2014)

Formulation of monodisperse water-in-oil emulsions encapsulating calcium ascorbate and ascorbic acid 2-glucoside by microchannel emulsification

Nauman Khalid^{*1, *2}, Isao Kobayashi^{*1}, Marcos A. Neves^{*1, *3}, Kunihiko Uemura^{*1}, Mitsutoshi Nakajima^{*1, *3}, Hiroshi Nabetani^{*1, *2}

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^{*3} Faculty of Life and Environmental Sciences, University of Tsukuba

Keywords: Microchannel emulsification, Calcium ascorbate, Ascorbic acid 2-glycoside, Monodisperse W/O emulsions, Droplet productivity

キーワード：マイクロチャネル乳化, アスコルビン酸カルシウム, アスコルビン酸2-グリコシド, 単分散W/Oエマルション, 液滴生産性

Food Research International, 62, 467-475 (2014)

Interfacial characteristics and microchannel emulsification of oleuropein-containing triglyceride oil-water systems

Safa Souilem^{*1,*4}, Isao Kobayashi^{*2,*3}, Marcos A. Neves^{*1,*3}, Logna Jlaiel^{*4}, Hiroko Isoda^{*1,*3}, Sami Sayadi^{*4}, Mitsutoshi Nakajima^{*1,*3}

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*2 Alliance for Research on North Africa, University of Tsukuba

*3 National Food Research Institute, NARO

*4 Center of Biotechnology of Sfax, Tunisia

Keywords: Olive leaf extract, Interfacial activity, Gibbs adsorption equation, Triglyceride oil-in-water emulsion, Microchannel emulsification

キーワード: オリーブ葉抽出物, 界面活性, ギブス吸着式, 水中トリグリセリド油エマルション, マイクロチャネル乳化

Food Science and Technology Research, 21, 7-11 (2015)

Rapid inactivation of pectin methylesterase in tomato juice by high electric field alternating current

Kunihiko Uemura, Chieko Takahashi, Isao Kobayashi

National Food Research Institute, NARO

Keywords: inactivation, pectin methylesterase, tomato, high electric field alternating current

キーワード: 失活, ペクチンメチルエステラーゼ, トマト, 交流高電界

Food Research International, 71, 16-22 (2015)

Direct observation and evaluation of cooked white and brown rice digestion by gastric digestion simulator provided with peristaltic function

Zheng Wang^{*1,*2}, Sosaku Ichikawa^{*1,*3}, Hiroyuki Koza^{*1,*3}, Marcos A. Neves^{*1,*3}, Mitsutoshi Nakajima^{*1,*3}, Kunihiko Uemura^{*1}, Isao Kobayashi^{*1}

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*3 Graduate School of Life and Environmental Sciences, University of Tsukuba

Keywords: Cooked white rice, Cooked brown rice, Gastric digestion simulator, Rice disintegration, Direct observation

キーワード: 炊飯白米, 炊飯玄米, 胃消化シミュレーター, 米飯粒子微細化, 直接観察

Bioscience, Biotechnology, and Biochemistry, 78 (12), 2120-2127 (2014)

Xylan-mediated aggregation of *Lactobacillus brevis* and its relationship with the surface properties and mucin-mediated aggregation of the bacteria

Katsuichi Saito^{*1}, Toshihide Nakamura^{*1}, Isao Kobayashi^{*1}, Mayumi Ohnishi-Kameyama^{*1}, Hitomi Ichinose^{*1,*2}, Keitarou Kimura^{*1}, Kazumi Funane^{*1}

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Keywords: *Lactobacillus brevis*, aggregation, surface layer protein, xylan, mucin

キーワード: 乳酸菌, 凝集, 細胞表層タンパク質, キシラン, ムチン

AMB Express, 4, 67 (2014)

Identification of a gene, *FMP21*, whose expression levels are involved in thermotolerance in *Saccharomyces cerevisiae*

Toshihide Nakamura*¹, Mami Yamamoto*¹, Katsuichi Saito*¹, Akira Ando*², Jun Shima*³

*¹ National Food Research Institute, NARO

*² NARO Institute of Vegetable and Tea Science

*³ Ryukoku University

Keywords: Thermotolerance, Yeast, Gene expression, Growth rate, *FMP21*

キーワード：高温耐性, 酵母, 遺伝子発現, 生育速度, *FMP21*

Bulletin of Insectology, 67 (1), 131-136 (2014)

Identification of Vietnamese *Coptotermes* pest species based on the sequencing of two regions of 16S rRNA gene

Thi-Thao Nguyen*¹, Thi-Huyen Do*², Thu-Huong Duong*², Quynh-Giang Le*², Trong-Khoa Dao*², Thi-Trung Nguyen*², Thi-Quy Nguyen*², Thi-Thu-Hien Nguyen*³, Keitarou Kimura*⁴, Nam-Hai Truong*²

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*² IBT, Vietnam Academy of Science and Technology

*³ Institute of Ecology and Work Protection, Vietnam

*⁴ National Food Research Institute, NARO

Keywords: *Coptotermes gestroi*, *Coptotermes formosanus*, taxonomy, mtDNA 16S rRNA

Journal of Bioscience and Bioengineering, 118 (6), 665-671 (2014)

Mining biomass-degrading genes through Illumina-based de novo sequencing and metagenomic analysis of free-living bacteria in the gut of the lower termite *Coptotermes gestroi* harvested in Vietnam

Thi Huyen Do*¹, Thi Thao Nguyen*², Thanh Ngoc Nguyen*¹, Quynh Giang Le*¹, Cuong Nguyen*¹, Keitarou Kimura*³, Nam Hai Truong*¹

*¹ IBT, Vietnam Academy of Science and Technology,

*² Vinh University

*³ National Food Research Institute, NARO

Keywords: Free-living gut bacterial community, *Coptotermes gestroi*, Cellulase, Hemicellulase, Illumina *de novo* sequencing, Pectinesterase, Metagenome

Food Science and Technology Research, 20 (6), 1183-1189 (2014)

Removal of radioactive cesium (¹³⁴Cs plus ¹³⁷Cs) from low-level contaminated water by charcoal and broiler litter biochar

Keitarou Kimura*¹, Mayumi Hachinohe*¹, K. Thomas Klasson*², Shioka Hamamatsu*¹, Shoji Hagiwara*¹, Setsuko Todoriki*¹, Shinichi Kawamoto*¹

*¹ National Food Research Institute, NARO

*² U.S. Department of Agriculture, Agricultural Research Service

Keywords: radioactive cesium, adsorption, charcoal, biochar, pH dependency

キーワード：放射性セシウム, 吸着, 活性炭, バイオチャー, pH依存性

Biochemical Journal, 467 (2), 259-270 (2015)

Molecular engineering of cycloisomaltooligosaccharide glucanotransferase from *Bacillus circulans* T-3040: structural determinants for the reaction product size and reactivity

Ryuichiro Suzuki*^{1, *2}, Nobuhiro Suzuki*^{3, *4}, Zui Fujimoto*³, Mitsuru Momma*³, Keitarou Kimura*¹, Shinichi Kitamura*⁵, Atsuo Kimura*⁶, Kazumi Funane*¹

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*⁴ Structural Biology Research Center, Photon Factory, Institute of Materials Structure Science, High Energy Accelerator Research Organization (KEK)

*⁵ College of Life, Environment, and Advanced Sciences, Osaka Prefecture University

*⁶ Division of Applied Bioscience, Research Faculty of Agriculture, Hokkaido University

Keywords: family 35 carbohydrate-binding module, cycloisomaltooligosaccharide, cycloisomaltooligosaccharide glucanotransferase, subsite engineering

キーワード: 糖結合モジュールファミリー35, 環状イソマルトメガロ糖, 環状イソマルトオリゴ糖, 環状イソマルトオリゴ糖 グルカノトランスフェラーゼ, サブサイト工学

Fungal Genetics and Biology, 73, 138-149 (2014)

The role of AtfA and HOG MAPK pathway in stress tolerance in conidia of *Aspergillus fumigatus*

Daisuke Hagiwara*¹, Satoshi Suzuki*², Katsuhiko Kamei*¹, Tohru Gonoï*¹, Susumu Kawamoto*¹

*¹ Medical Mycology Research Center, Chiba Univ.

*² National Food Research Institute, NARO

Keywords: *Aspergillus fumigatus*, AtfA, Conidia, MAPK, Trehalose

キーワード: アスペルギルスフミガタス, AtfA, 分生子, MAPカインース, トレハロース

食品総合研究所研究報告, 79, 1-7 (2015)

Convenient preparation of fungal genomic DNA templates for polymerase chain reaction and temporal temperature gradient gel electrophoresis analyses of fungal diversity in the Japanese fermented soybean paste miso (味噌からの簡便迅速な真菌ゲノムDNAの抽出法により調整された鋳型DNAを用いたPCR産物の時間温度勾配電気泳動法による味噌中の真菌叢の解析)

鈴木 聡*¹, 柏木 豊*², 楠本憲一*¹

*¹ (独) 農研機構食品総合研究所

*² 東京農大

Keywords: FTA® card, traditional Japanese fermented food miso, PCR-TTGE, fungal diversity

キーワード: FTAカード, 味噌, PCR-TTGE, 真菌多様性

Food Science and Technology Research, 20 (2), 367-374 (2014)

Characterization of acid phosphatase (AphC) from miso koji mold, *Aspergillus oryzae* KBN630, AphC is mainly responsible for both acid phosphatase activity and 5'-IMP dephosphorylation activity in soybean-koji culture

Shoko Yoshino-yasuda*¹, Emi Nakamura*¹, Natsuko Ono*¹, Osamu Hasegawa*¹, Yoshimi Iga*², Yohei Shiraishi*², Yutaka Wagu*², Kazuhiro Sugimoto*³, Tohru Suzuki*⁴, Tatsuya Sugimoto*⁵, Ken-Ichi Kusumoto*⁶, Masashi Kato*⁷ and Noriyuki Kitamoto*¹

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*³ Technical Center of Nagoya University

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*⁵ Nakamo

*⁶ National Food Research Institute, NARO

*⁷ Department of Applied Biological Chemistry, Faculty of Agriculture, Meijo University

Keywords: acid phosphatase gene, *Aspergillus oryzae*, 5'-IMP dephosphorylation, miso, soybean-koji culture

Journal of Bioscience and Bioengineering, 119 (1), 43-46 (2015)

Telomere-mediated chromosomal truncation in *Aspergillus oryzae*.

Sawaki Tada*¹, Hikaru Ohkuchi*¹, Mayumi Matsushita-Morita*¹, Ikuyo Furukawa*¹, Ryota Hattori*¹, Satoshi Suzuki*¹, Yutaka Kashiwagi*² and Ken-Ichi Kusumoto*¹

*¹ National Food Research Institute, NARO

*² Department of Fermentation Science, Tokyo University of Agriculture

Keywords: *Aspergillus oryzae*, Filamentous fungi, Chromosomal truncation, Aflatoxin, Telomere position effect

Fishery Science, 80 (5), 1109-1115 (2014)

Culture-independent analysis of the bacterial community during fermentation of pa-som, a traditional fermented fish product in Laos

Junichiro Marui*¹, Sayvisene Boulom*², Wanchai Panthavee*³, Mari Momma*¹, Ken-Ichi Kusumoto*⁴, Kazuhiko Nakahara*¹, Masayoshi Saito*¹

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*² Faculty of Agriculture, National University of Laos,

*³ Institute of Food Research and Product Development

*⁴ National Food Research Institute, NARO

Keywords: Pa-som, Fermented fish product, PCR denaturing gel gradient electrophoresis, Lactic acid bacteria

JSM Microbiology, 2 (2), 1012 (2014)

Influence of Agmatine Supplemented Culture Medium on Metabolic Products and Gene Expression in *Fusarium asiaticum*.

Tadahiro Suzuki, Hifumi Yoshioka, Yumiko Iwahashi

National Food Research Institute, NARO

Keywords: *Fusarium*, Mycotoxine, Deoxynivalenol

Toxins (Basel), 7, 187-200 (2015)

Low Toxicity of Deoxynivalenol-3-Glucoside in Microbial Cells

Tadahiro Suzuki, Yumiko Iwahashi

National Food Research Institute, NARO

Keywords: deoxynivalenol-3-glucoside, DNA microarray, yeast, *Chlamydomonas reinhardtii*

PLoS One, 9 (3), e92353 (2014)

1, 2- β -Oligoglucan phosphorylase from *Listeria innocua*

Masahiro Nakajima*^{1, 2}, Hiroyuki Toyozumi*¹, Koichi Abe*¹, Hiroyuki Nakai*³, Hayao Taguchi*¹, Motomitsu Kitaoka*²

*¹ Faculty of Science and Technology, Tokyo University of Science

*² National Food Research Institute, NARO

*³ Graduate School of Science & Technology, Niigata University

Keywords: 1, 2- β -oligoglucan phosphorylase, 1, 2- β -glucan, *Listeria innocua*, glycoside hydrolase family 94

Journal of Applied Glycoscience, 61 (2), 59-66 (2014)

Characterization of two phosphorylases for α -1, 3-oligoglucans from *Clostridium phytofermentans*

Takanori Nihira*^{1, *2}, Mamoru Nishimoto*¹, Hiroyuki Nakai*², Ken'ichi Ohtsubo*², Motomitsu Kitaoka*¹

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*² Graduate School of Science & Technology, Niigata University

Keywords: α -1, 3-oligoglucan phosphorylase, α -1, 3-oligoglucan, nigerose phosphorylase, glycoside hydrolase family 65, *Clostridium phytofermentans*

Bioscience, Biotechnology and Biochemistry, 78 (2), 263-270 (2014)

Characterization of a thermophilic 4-*O*- β -D-mannosyl-D-glucose phosphorylase from *Rhodothermus marinus*

Nongluck Jaito*¹, Wataru Saburi*¹, Rei Odaka*¹, Yusuke Kido*¹, Ken Hamura*¹, Mamoru Nishimoto*², Motomitsu Kitaoka*², Hirokazu Matsui*¹, Haruhide Mori*¹

*¹ Faculty of Agriculture, Hokkaido University

*² National Food Research Institute, NARO

Keywords: *Rhodothermus marinus*, 4-*O*- β -D-mannosyl-D-glucose phosphorylase, mannan, substrate specificity, phosphorolysis

The Journal of Biological Chemistry, 289 (26), 18067-18075 (2014)

Structural basis for reversible phosphorolysis and hydrolysis reactions of 2-*O*- α -glucosylglycerol phosphorylase

Kouki K. Touhara*¹, Takanori Nihira*², Motomitsu Kitaoka*³, Hiroyuki Nakai*², Shinya Fushinobu*¹

*¹ Department of Biotechnology, University of Tokyo

*² Faculty of Agriculture, Niigata University

*³ National Food Research Institute, NARO

Keywords: glycoside hydrolase, phosphorylase, X-ray crystallography, *Bacillus selenitireducens*, glucosylglycerol

Journal of Applied Glycoscience, 61 (3), 75-80 (2014)

One pot enzymatic production of nigerose from common sugar resources by employing nigerose phosphorylase

Takanori Nihira*¹, Futaba Miyajima*², Kazuhiro Chiku*², Mamoru Nishimoto*³, Motomitsu Kitaoka*³, Ken'ichi Ohtsubo*^{1, *2}, Hiroyuki Nakai*^{1, *2}

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*² Faculty of Agriculture, Niigata University

*³ National Food Research Institute, NARO

Keywords: nigerose, maltose, sucrose, soluble starch, nigerose phosphorylase

Molecular Microbiology, 94 (5), 1024-1040 (2014)

A β 1-6/ β 1-3 galactosidase from *Bifidobacterium animalis* subsp. *lactis* BI-04 gives insight into sub-specificities of β -galactoside catabolism within *Bifidobacterium*

Alexander H. Viborg*¹, Folmer Fredslund*¹, Takane Katayama*², Stinne K. Nielsen*³, Birte Svensson*¹, Motomitsu Kitaoka*⁴, Leila Lo Leggio*³, Maher Abou Hachem*¹

*¹ Department of Systems Biology, Technical University of Denmark

*² Ishikawa Prefectural University

*³ Department of Chemistry, University of Copenhagen

*⁴ National Food Research Institute, NARO

Keywords: β -galactosidase, glycoside hydrolase, *Bifidobacterium animalis* subsp. *lactis*, substrate specificity, galactooligosaccharides

Carbohydrate Research, 401, 1-4 (2015)

Facile enzymatic synthesis of sugar 1-phosphates as substrates for phosphorylases using anomeric kinases

Yuan Liu, Mamoru Nishimoto, Motomitsu Kitaoka

National Food Research Institute, NARO

Keywords: sugar 1-phosphate, anomeric kinase, pyruvate kinase, electro dialysis, substrate for phosphorylase

PLoS One, 9 (12), e114882 (2014)

Discovery of two β -1, 2-mannoside phosphorylases showing different chain length specificity from *Thermoanaerobacter* sp. X-514A

Kazuhiro Chiku^{*1}, Takanori Nihira^{*1}, Erika Suzuki^{*1}, Mamoru Nishimoto^{*2}, Motomitsu Kitaoka^{*2}, Ken'ichi Ohtsubo^{*1}, Hiroyuki Nakai^{*1}

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^{*2} National Food Research Institute, NARO

Keywords: β -1, 2-mannoside phosphorylase, *Thermoanaerobacter*, β -1, 2-mannan, glycoside hydrolase family 130

Journal of Applied Glycoscience, 62 (2), 47-52 (2015)

Large-scale preparation of 1, 2- β -glucan using 1, 2- β -oligoglucan phosphorylase

Koichi Abe^{*1}, Masahiro Nakajima^{*1}, Motomitsu Kitaoka^{*2}, Hiroyuki Toyozumi^{*1}, Yuta Takahashi^{*1}, Naohisa Sugimoto^{*3}, Hiroyuki Nakai^{*3}, Hayao Taguchi^{*1}

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^{*3} Graduate School of Science & Technology, Niigata University

Keywords: 1, 2- β -glucan, 1, 2- β -oligoglucan phosphorylase, sucrose phosphorylase, glycoside hydrolase family 94

Biochimica et Biophysica Acta, 1854 (5), 333-340 (2015)

Open-close motion on ligand binding and two magnesium ions required for the catalysis of *N*-acetylhexosamine 1-kinase

Mayo Sato^{*1}, Takatoshi Arakawa^{*1}, Young-Woo Nam^{*1}, Mamoru Nishimoto^{*2}, Motomitsu Kitaoka^{*2}, Shinya Fushinobu^{*1}

^{*1} Department of Biotechnology, University of Tokyo

^{*2} National Food Research Institute, NARO

Keywords: crystal structure, anomeric sugar kinase, conformational change, magnesium ion, *Bifidobacterium longum*

Journal of Carbohydrate Chemistry, 33, 117-136 (2014)

Synthesis of glycopyranosyl- (1 \rightarrow 2)-*N*-acetylneuraminic acid nonreducing disaccharides and their evaluation as neuraminidase substrates

Shiro Komba, Sachiko Machida

National Food Research Institute, NARO

Keywords: Nonreducing sugar, Sialic acid, Galactose, Glucose, Neuraminidase

食品総合研究所研究報告, 79, 67-76 (2015)

宿主株が異なる *Saccharomyces cerevisiae* 組換え体におけるキシロース発酵能の比較

榊原祥清, 王曉輝, 徳安健

(独) 農研機構食品総合研究所

Keywords: Bioethanol, *Saccharomyces cerevisiae*, Xylose fermentation, Xylulose fermentation
 キーワード: バイオエタノール, サッカロミセス・セレビジエ, キシロース発酵, キシルロース発酵

International Journal of Biochemistry Research & Review, 4 (4), 284-294 (2014)

Lectin-like Oxidized LDL receptor 1 Mediates the uptake of the C-terminal domain of Hsp70 (A promising Immune adjuvant molecule) and antigen peptide complexes.

M. K. Kuramochi*¹, S. Kajiwara*², T. Minowa*², S. Machida*¹

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*² Nanotechnology Innovation Station, National Institute for Materials Science

Keywords: C-terminal domain of Hsp70 (C70), lectin-like oxidized LDL receptor-1 (LOX-1), antigen peptides, immune adjuvant

Journal of Bacteriology 196 (8), 1514-1524, (2014)

The *mthA* mutation conferring low-level resistance to streptomycin enhances antibiotic production in *Bacillus subtilis* by increasing the s-adenosylmethionine pool size

Shigeo Tojo*¹, Ji-Yun Kim*², Yukinori Tanaka*¹, Takashi Inaoka*², Yoshikazu Hiraga*¹, Kozo Ochi*¹

*¹ Hiroshima Institute of Technology

*² National Food Research Institute, NARO

Keywords: streptomycin resistance mutation, antibiotic production, s-adenosylmethionine, *Bacillus subtilis*

Microbiology 160, 2474-2480, (2014)

Tetracycline tolerance mediated by gene amplification in *Bacillus subtilis*

Wannasiri Wannarat*^{1, 2}, Shiori Motoyama*¹, Kenta Masuda*³, Fujio Kawamura*³, Takashi Inaoka*¹

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*² Kasetsart Agricultural and Agro-Industrial Production Improvement Institute (KAPI), Kasetsart University

*³ Rikkyo University

Keywords: gene amplification, tetracycline, *Bacillus subtilis*

The Journal of Antibiotics, 68 (7), 481-483 (2015)

Structure and biosynthetic implication of 5*R*-(*N*-acetyl-L-cysteiny)-14*S*-hydroxy-dihydrokalafungin from a mutant of the *actVA*-ORF4 gene for actinorhodin biosynthesis in *Streptomyces coelicolor* A3 (2)

Takaaki Taguchi*¹, Tomoki Maruyama*¹, Ryuichi Sawa*², Masayuki Igarashi*², Susumu Okamoto*³, Koji Ichinose*¹

*¹ Research Institute of Pharmaceutical Sciences, Musashino University

*² Institute of Microbial Chemistry (BIKAKEN)

*³ National Food Research Institute, NARO

Keywords: Actinorhodin, Biosynthesis, Shunt product, Structural analysis

Frontiers in Microbiology, online journal (2014)

Extensive amplification of GI-VII-6, a multidrug resistance genomic island of *Salmonella enterica* serovar Typhimurium, increases resistance to extended-spectrum cephalosporins

Ken-ichi Lee*¹, Masato Kusumoto*¹, Tsuyoshi Sekizuka*², Makoto Kuroda*², Ikuo Uchida*³, Taketoshi Iwata*¹, Susumu Okamoto*⁴, Kimiko Yabe*⁴, Takashi Inaoka*⁴, and Masato Akiba*^{1, *5}

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*⁵ Graduate School of Life and Environmental Sciences, Osaka Prefecture University

Keywords: gene amplification, multidrug resistance, extended-spectrum cephalosporins, *Salmonella*

Bioscience, Biotechnology, and Biochemistry, 78 (2), 231-237 (2014)

Tomato FRUITFULL homologs regulate fruit ripening via ethylene biosynthesis

Yoko Shima*¹, Masaki Fujisawa*¹, Mamiko Kitagawa*², Toshitsugu Nakano*¹, Junji Kimbara*², Nobutaka Nakamura*¹, Takeo Shiina*¹, Junichi Sugiyama*¹, Toshihide Nakamura*¹, Takafumi Kasumi*³, Yasuhiro Ito*¹

*¹ National Food Research Institute, NARO

*² Research Institute, Kagome

*³ Department of Chemistry and Lifescience, Nihon University

Keywords: Ripening inhibitor (RIN), MADS-domain protein, FRUITFULL (FUL), ethylene

キーワード：果実成熟，転写因子，MADSボックス転写因子，エチレン

Journal of Experimental Botany, 65 (12), 3111-3119 (2014)

The AP2/ERF transcription factor SIERF52 functions in flower pedicel abscission in tomato

Toshitsugu Nakano, Masaki Fujisawa, Yoko Shima, Yasuhiro Ito

National Food Research Institute, NARO

Keywords: Abscission, abscission zone, cell-wall hydrolytic enzyme, tomato, transcription factor

キーワード：脱離，離層，細胞壁加水分解酵素，トマト，転写因子

食品総合研究所研究報告, 79, 41-45 (2015)

巨大糖タンパク質プロテオグリカンの小角X線散乱測定による特性解析

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Keywords: food biopolymer, solution property, physicochemical characterization