

# Four new species of *Kockovaella* isolated from plant leaves collected in Vietnam

Luong D.T., Takashima M., Ty P.V., Dung N.L., Nakase T.

Japan Collection of Microorganisms, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, Japan; Centre of Applied Microbiology, University of Science, Vietnam National University, Hanoi, Viet Nam; Yothi Research Unit, National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency, 73/1 Rama VI Road, Bangkok 10400, Thailand

**Abstract:** Five ballistoconidiogenous yeast strains, isolated from plant leaves at Cuc Phuong National Forest of Ninh Binh, Vietnam, were assigned to the genus *Kockovaella* based on morphological and chemotaxonomical characteristics. They represent four new species based on analyses of 18S rDNA sequence, sequences of internal transcribed spacer regions, and DNA-DNA reassociation experiments. Four new species, *Kockovaella calophylli* (1 strain), *Kockovaella cucphuongensis* (2 strains), *Kockovaella litseae* (1 strain), and *Kockovaella vietnamensis* (1 strain) are proposed for these strains.

**Author Keywords:** *Kockovaella calophylli*; *Kockovaella cucphuongensis*; *Kockovaella litseae*; *Kockovaella vietnamensis*; Systematics

**Index Keywords:** ribosome DNA; article; chemotaxonomy; controlled study; DNA recombination; DNA sequence; genetic transcription; *kockovaella*; morphology; nonhuman; nucleotide sequence; phylogeny; plant leaf; sequence analysis; unindexed sequence; Viet Nam; yeast

Year: 2000

Source title: Journal of General and Applied Microbiology

Volume: 46

Issue: 6

Page : 297-310

Cited by: 1

Link: [Scopus Link](#)

Molecular Sequence Numbers: DDBJ: AB001032, AB001033, AB001034, AB001035, AB001036, AB005452, AB032619, AB032624, AB032627, AB032629, AB032635, AB032638, AB032640, AB032641, AB032645, AB032659, AB032660, AB032661, AB032662, AB042223, AB042224, AB042225, AB042226, AB042227, AB042228, AB042229, AB042230, AB042231, AB042232, D31648, D31649, D31650, D31651, D31652, D31654, D31660, D64117, D78323, D78325, D78326, D78327, D78328, D78330, D78331, X60179, AB042218, AB042219, AB042220, AB042221, AB042222

Correspondence Address: Luong, D.T.; Vietnam Type Culture Collection, Centre of Applied Microbiology, Vietnam National University, Hanoi, Viet Nam

ISSN: 221260

CODEN: JGAMA

Language of Original Document: English

Abbreviated Source Title: Journal of General and Applied Microbiology

Document Type: Article

Source: Scopus

Authors with affiliations:

- Luong, D.T., Japan Collection of Microorganisms, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, Japan, Centre of Applied Microbiology, University of Science, Vietnam National University, Hanoi, Viet Nam
- Takashima, M., Japan Collection of Microorganisms, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, Japan
- Ty, P.V., Centre of Applied Microbiology, University of Science, Vietnam National University, Hanoi, Viet Nam
- Dung, N.L., Centre of Applied Microbiology, University of Science, Vietnam National University, Hanoi, Viet Nam
- Nakase, T., Japan Collection of Microorganisms, RIKEN (The Institute of Physical and Chemical Research), Wako, Saitama 351-0198, Japan, Yothi Research Unit, National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency, 73/1 Rama VI Road, Bangkok 10400, Thailand

References:

- Cañete-Gibas, C.F., Takashima, M., Sugita, T., Nakase, T., Three new species of *Kockovaella* isolated from plants collected in the Ogasawara Islands (1998) *J. Gen. Appl. Microbiol.*, 44, pp. 11-18
- Felsenstein, J., Confidence limits on phylogenies: An approach using the bootstrap (1985) *Evolution*, 39, pp. 783-791
- Hamamoto, M., Nakase, T., Ballistosporous yeasts found on the surface of plant materials collected in New Zealand. 1. Six new species in the genus *Sporobolomyces* (1995) *Antonie van Leeuwenhoek*, 67, pp. 151-171
- Hamamoto, M., Kuroyanagi, T., Nakase, T., *Fellomyces ogasawarensis* sp. nov. and *Fellomyces distylii* sp. nov., yeasts isolated from a plant in Japan (1998) *Int. J. Syst. Bacteriol.*, 48, pp. 287-293
- Kimura, M., A simple method for estimating evolutionary rate of base substitutions through comparative studies of nucleotide sequences (1980) *J. Mol. Evol.*, 16, pp. 111-120
- Komagata, K., Nakase, T., *Reitoshokuhin no biseibutsu ni kansuru kenkyu. V. Shihan reitoshokuhin yori bunri shita kobo no seiyo* (Microbiological studies on frozen foods. V. General properties of yeast isolated from frozen foods) (1967) *Shokuhin Eiseigaku Zasshi*, 8, pp. 53-57. , (in Japanese)
- Nakase, T., Komagata, K., Fukazawa, V., *Candida pseudointermedia* sp. nov. isolated from "Kamaboko," a traditional fish-paste product in Japan (1976) *J. Gen. Appl. Microbiol.*, 22, pp. 177-182
- Nakase, T., Suzuki, M., *Bullera megalospora*, a new species of yeast forming large ballistospores isolated from dead leaves of *Oryza sativa*, *Miscanthus sinensis*, and *Sasa* sp. in Japan (1986) *J. Gen. Appl. Microbiol.*, 32, pp. 225-240
- Nakase, T., Itoh, M., Takematsu, A., Mikata, K., Banno, I., Yamada, Y., *Kockovaella*, a new ballistospore-forming anamorphic yeast genus (1991) *J. Gen. Appl. Microbiol.*, 37, pp. 175-197
- Nakase, T., Takashima, M., A simple procedure for the high frequency isolation of new taxa of ballistosporous yeasts living on the surfaces of plants (1993) *RIKEN Rev.*, 3, pp. 33-34
- Prillinger, H., Kraepelin, G., Lopandic, K., Schweigkofler, W., Molnár, O., Weigang, F., Dreyfuss, M.M., New species of *Fellomyces* isolated from epiphytic lichen species (1997) *Syst. Appl. Microbiol.*, 20, pp. 572-584
- Saitou, N., Nei, M., The neighbor-joining method: A new method for reconstructing phylogenetic tree (1987) *Mol. Biol. Evol.*, 4, pp. 406-425
- Sugita, T., Nishikawa, A., Ikeda, R., Shinoda, T., Identification of medically relevant *Trichosporon* species based on sequences of internal transcribed spacer regions and construction of a database for *Trichosporon* identification (1999) *J. Clin. Microbiol.*, 37, pp. 1985-1993

- Suzuki, M., Nakase, T., The distribution of xylose in the cells of ballistosporous yeasts-Application of high performance liquid chromatography without derivatization to the analysis of xylose in whole cell hydrolysates (1988) *J. Gen. Appl. Microbiol.*, 34, pp. 95-103
- Takashima, M., Nakase, T., *Bullera penniseticola* sp. nov. and *Kockovaella sacchari* sp. nov., two new species isolated from plant materials in Thailand (1998) *Int. J. Syst. Bacteriol.*, 48, pp. 1025-1030
- Takashima, M., Nakase, T., Molecular phylogeny of the genus *Cryptococcus* and related species based on the sequences of 18S rDNA and internal transcribed spacer regions (1999) *Microbiol. Cult. Coll.*, 15, pp. 33-45
- Takashima, M., Nakase, T., Four new species of the genus *Sporobolomyces* isolated from leaves in Thailand (2000) *Mycoscience*, 41, pp. 357-369
- Tamaoka, J., Komagata, K., Determination of DNA base composition by reversed-phase high-performance liquid chromatography (1984) *FEMS Lett.*, 25, pp. 125-128
- Thompson, J.D., Higgins, D.G., Gibson, T.J., CLUSTAL W: Improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice (1994) *Nucleic Acids Res.*, 22, pp. 4673-4680
- Yarrow, D., *Methods for the isolation, maintenance and identification of yeasts* (1998) *The Yeasts, A Taxonomic Study*, pp. 77-100. , 4th ed., ed. by Kurtzman, C. P. and Fell, J. W., Elsevier, Amsterdam