

List of publications Naoki Sato

Original papers

1. N. Sato and N. Murata (1978)
Preparation of chlorophyll *a*, chlorophyll *b* and bacteriochlorophyll *a* by means of column chromatography with diethylaminoethylcellulose.
Biochim. Biophys. Acta 501: 103-111.
2. N. Murata and N. Sato (1978)
Studies on the absorption spectra of chlorophyll *a* in aqueous dispersions of lipids from the photosynthetic membranes.
Plant Cell Physiol. 19: 401-410.
3. N. Sato, N. Murata, Y. Miura and N. Ueta (1979)
Effect of growth temperature on lipid and fatty acid compositions in the blue-green algae, *Anabaena variabilis* and *Anacystis nidulans*.
Biochim. Biophys. Acta 572: 19-28.
4. D. Fork, N. Murata and N. Sato (1979)
Effect of growth temperature on the lipid and fatty acid composition, and the dependence on temperature of light-induced redox reactions of cytochrome *f* and of light energy redistribution in the thermophilic blue-green alga, *Synechococcus lividus*.
Plant Physiol. 63: 524-530.
5. N. Murata, T. Ono and N. Sato (1979)
Lipid phase of membrane and chilling injury in the blue-green alga, *Anacystis nidulans*.
In Low Temperature Stress in Crop Plants. Edited by J. M. Lyons, D. Graham and J. K. Raison. pp. 337-345. Academic Press, New York.
6. N. Sato and N. Murata (1980)
Temperature shift-induced responses in lipids in the blue-green alga, *Anabaena variabilis*. The central role of diacylmonogalactosylglycerol in thermo-adaptation.
Biochim. Biophys. Acta 619: 353-366.
7. N. Sato and N. Murata (1980)
Desaturation of fatty acids in lipids in response to the growth temperature in the blue-green alga, *Anabaena variabilis*.
In Biogenesis and Function of Plant Lipids. Edited by P. Mazliak, P. Benveniste, C. Costes and R. Douce. pp. 207-210. Elsevier/North-Holland Biomedical Press, Amsterdam.
8. N. Murata, N. Sato, T. Omata and T. Kuwabara (1981)
Separation and characterization of thylakoid and cell envelope of the blue-green alga (cyanobacterium) *Anacystis nidulans*.
Plant Cell Physiol. 22: 855-866.
9. N. Sato and N. Murata (1981)
Studies on the temperature shift-induced desaturation of fatty acids in monogalactosyl diacylglycerol in the blue-green alga (cyanobacterium), *Anabaena variabilis*.
Plant Cell Physiol. 22: 1043-1050.
10. N. Sato and N. Murata (1982)
Lipid biosynthesis in the blue-green alga, *Anabaena variabilis* I. Lipid classes.
Biochim. Biophys. Acta 710: 271-278.

11. N. Sato and N. Murata (1982)
Lipid biosynthesis in the blue-green alga, *Anabaena variabilis* II. Fatty acids and lipid molecular species.
Biochim. Biophys. Acta 710: 279-289.
12. N. Murata, N. Sato, N. Takahashi and Y. Hamazaki (1982)
Compositions and positional distributions of fatty acids in phospholipids from leaves of chilling-sensitive and chilling-resistant plants.
Plant Cell Physiol. 23: 1071-1079.
13. N. Sato and N. Murata (1982)
Lipid biosynthesis in the blue-green alga (cyanobacterium), *Anabaena variabilis* III. UDP-glucose:diacylglycerol glucosyltransferase activity in vitro.
Plant Cell Physiol. 23: 1115-1120.
14. N. Murata and N. Sato (1982)
In vivo synthesis of lipids in the blue-green alga, *Anabaena variabilis*.
In Biochemistry and Metabolism of Plant Lipids. Edited by J. F. G. M. Winternans and P. J. C. Kuiper. pp. 165-168. Elsevier Biomedical Press, Amsterdam.
15. N. Sato and N. Murata (1982)
In vitro synthesis of glyceroglycolipids in the blue-green alga, *Anabaena variabilis*.
In Biochemistry and Metabolism of Plant Lipids. Edited by J. F. G. M. Winternans and P. J. C. Kuiper. pp. 201-204. Elsevier Biomedical Press, Amsterdam.
16. N. Murata and N. Sato (1983)
Analysis of lipids in *Prochloron* sp.: Occurrence of monoglucosyl diacylglycerol.
Plant Cell Physiol. 24: 133-138.
17. N. Sato and M. Furuya (1983)
Isolation and identification of diacylglyceryl-*O*-4'-(*N,N,N*-trimethyl)homoserine from the fern *Adiantum capillus-veneris* L.
Plant Cell Physiol. 24: 1113-1120.
18. N. Sato and M. Furuya (1984)
Distribution of diacylglyceryltrimethylhomoserine in selected species of vascular plants.
Phytochemistry 23: 1625-1627.
19. N. Murata, N. Sato and N. Takahashi (1984)
Very-long-chain saturated fatty acids in phosphatidylserine from higher plant tissues.
Biochim. Biophys. Acta 795: 147-150.
20. N. Sato and M. Furuya (1984)
The composition of lipids and fatty acids determined at various stages of haploid and diploid generations in the fern *Adiantum capillus-veneris*.
Physiol. Plant. 62: 139-147.
21. N. Sato and M. Furuya (1984)
Distribution of diacylglyceryltrimethylhomoserine in green plants.
In Structure, Function and Metabolism of Plant Lipids. Edited by P. A. Siegenthaler and W. Eichenberger. pp. 171-174. Elsevier Science Publishers, Amsterdam.
22. N. Sato and M. Furuya (1985)
Distribution of diacylglyceryltrimethylhomoserine and phosphatidylcholine in non-vascular green plants.
Plant Sci. 38: 81-85.

23. N. Sato (1985)
Lipid biosynthesis in epidermal, guard and mesophyll cell†protoplasts from leaves of *Vicia faba* L.
Plant Cell Physiol. 26: 805-811.
24. N. Sato and M. Furuya (1985)
Synthesis of translatable mRNA for phytochrome during imbibition in embryonic axes of *Pisum sativum* L.
Plant Cell Physiol. 26: 1511-1517.
25. N. Sato, K. Tomizawa, Y. Komeda and M. Furuya (1986)
Partial enrichment of pea phytochrome mRNA by gel electrophoresis and transfer to poly(U)-paper.
Plant Cell Physiol. 27: 183-186.
26. N. Sato, Y. Seyama and N. Murata (1986)
Lipid-linked desaturation of palmitic acid in monogalactosyl diacylglycerol in the blue-green alga (cyanobacterium) *Anabaena variabilis*.
Plant Cell Physiol. 27: 819-835.
27. S. Tokutomi, Y. Inoue, N. Sato, K. T. Yamamoto and M. Furuya (1986)
Effect of pH on absorption spectra of pea 114 and 121 kilodalton phytochromes during and after red-light irradiation.
Plant Cell Physiol. 27: 765-773.
28. K. Tomizawa, Y. Komeda, N. Sato, A. Nagatani, T. Iino and M. Furuya (1986)
Isolation of cDNA for pea phytochrome using an expression vector.
Plant Cell Physiol. 27: 1101-1108.
29. N. Sato (1987)
Lipid biosynthesis in epidermal, guard, and mesophyll cell protoplasts from leaves of *Vicia faba* L.
In The Metabolism, Structure, and Function of Plant Lipids. Edited by P. K. Stumpf, J. B. Mudd and W. D. Nes. pp. 545-547. Plenum Press, New York.
30. N. Sato, Y. Nemoto and M. Furuya (1987)
Lipids of *Chattonella antiqua* (Raphidophyceae).
In The Metabolism, Structure, and Function of Plant Lipids. Edited by P. K. Stumpf, J. B. Mudd and W. D. Nes. pp. 661-663. Plenum Press, New York.
31. N. Sato, Y. Nemoto and M. Furuya (1988)
Lipids of *Chattonella antiqua* (Raphidophyceae).
Plant Physiol. Biochem. 26: 93-98.
32. N. Sato (1988)
Dual role of methionine in the biosynthesis of diacylglyceryltrimethylhomoserine in *Chlamydomonas reinhardtii*.
Plant Physiol. 86: 931-934.
33. N. Sato and K. Kato (1988)
Analysis and biosynthesis of diacylglyceryl-*N,N,N*-trimethyl-homoserine in the cells of *Marchantia polymorpha* in suspension culture.
Plant Sci. 55: 21-25.
34. N. Sato (1988)
Nucleotide sequence and expression of the phytochrome gene in *Pisum sativum*. Differential regulation by light of multiple transcripts.
Plant Mol. Biol. 11: 697-710.
35. N. Sato (1989)

Modulation of lipid and fatty acid content by carbon dioxide in *Chlamydomonas reinhardtii*.
Plant Sci. 61: 17-21.

36. K. Tomizawa, N. Sato and M. Furuya (1989)
Phytochrome control of multiple transcripts of the phytochrome gene in *Pisum sativum*.
Plant Mol. Biol. 12: 295-299.
37. S. Araki, T. Sakurai, T. Oohusa, M. Kayama and N. Sato (1989)
Characterization of sulfoquinovosyl diacylglycerol from marine red algae.
Plant Cell Physiol. 30: 775-781.
38. N. Sato (1989)
Biosynthesis of homoserine lipid.
In Biological Role of Plant Lipids. Edited by P. A. Biacs, K. Bruiz and T. Kremmer. pp. 57-60.
Akademiai Kiado, Budapest and Plenum Publishing Corporation, New York.
39. N. Sato (1989)
Effects of CO₂ concentration on the composition of lipids in *Chlamydomonas reinhardtii*.
In Biological Role of Plant Lipids. Edited by P. A. Biacs, K. Bruiz and T. Kremmer. pp. 553-554.
Akademiai Kiado, Budapest and Plenum Publishing Corporation, New York.
40. N. Sato (1990)
Nucleotide sequence of a pseudogene for pea phytochrome reminiscent of an incorrect splicing event.
Nucleic Acids Res. 18: 3632.
41. N. Sato and N. Murata (1991)
Transition of lipid phase in aqueous dispersions of diacylglyceryltrimethyl-homoserine.
Biochem. Biophys. Acta 1082: 108-111.
42. S. Araki, W. Eichenberger, T. Sakurai and N. Sato (1991)
Distribution of diacylglycerylhydroxymethyltrimethyl-beta-alanine (DGTA) and phosphatidylcholine
in brown algae.
Plant Cell Physiol. 32: 623-628.
43. N. Ohta, N. Sato, S. Kawano and T. Kuroiwa (1991)
Methylation of DNA in the chloroplasts and amyloplasts of the pea, *Pisum sativum*.
Plant Sci. 78: 33-42.
44. N. Sato (1991)
Lipids in *Cryptomonas* CR-1. I. Occurrence of betaine lipids.
Plant Cell Physiol. 32: 819-825.
45. N. Sato (1991)
Lipids in *Cryptomonas* CR-1. II. Biosynthesis of betaine lipids and galactolipids.
Plant Cell Physiol. 32: 845-851.
46. Y. Komeda, H. Yamashita, N. Sato, H. Tsukaya and S. Naito (1991)
Regulated expression of a gene-fusion product derived from the gene for phytochrome I from *Pisum sativum* and the *uidA* gene from *E. coli* in transgenic *Petunia hybrida*.
Plant Cell Physiol. 32: 737-743.
47. N. Sato (1992)
Cloning of a low-temperature-induced gene *lti2* from the cyanobacterium *Anabaena variabilis* M3 that
is homologous to α -amylases.
Plant Mol. Biol. 18: 165-170.

48. S. Araki, T. Sakurai, T. Oohusa and N. Sato (1992)
Comparative restriction endonuclease analysis of rhodoplast DNA from different species of *Porphyra* (Bangiales, Rhodophyta).
Nippon Suisan Gakkaishi 58: 477-480.
49. N. Sato, C. Albrieux, J. Joyard, R. Douce and T. Kuroiwa (1992)
Detection and characterization of plastid envelope DNA-binding protein (PEND protein) in developing pea chloroplasts.
In Research in Photosynthesis. Edited by N. Murata. Vol. III. †pp. 453-456. Kluwer Academic Publishers, Dordrecht.
50. N. Sato, C. Albrieux, J. Joyard, R. Douce and T. Kuroiwa (1993)
Detection and characterization of a plastid envelope DNA-binding protein which may anchor plastid nucleoids.
EMBO J. 12: 555-561.
51. H. Uchida, S. Kawano, N. Sato and T. Kuroiwa (1993)
Isolation and characterization of novel genes which are expressed during the very early stage of zygote formation in *Chlamydomonas reinhardtii*.
Curr. Genet. 24: 296-300.
52. N. Sato (1994)
Effect of exogenous glucose on the accumulation of monoglucosyl diacylglycerol in the cyanobacterium *Synechocystis* PCC 6803.
Plant Physiol. Biochem. 32: 121-126.
53. N. Sato (1994)
A cold-regulated cyanobacterial gene cluster encodes RNA-binding protein and ribosomal protein S21.
Plant Mol. Biol. 24: 819-823.
54. N. Ohta, N. Sato, S. Kawano and T. Kuroiwa (1994)
The *trpA* gene on the plastid genome of *Cyanidium caldarium* strain RK-1.
Curr. Genet. 25: 357-361
55. N. Sato (1995)
A family of cold-regulated RNA-binding protein genes in the cyanobacterium *Anabaena variabilis* M3.
Nucl. Acids Res. 23: 2161-2167.
56. M. Nakayama, T. Masuda, N. Sato, H. Yamagata, C. Bowler, H. Ohta, Y. Shioi and K. Takamiya (1995)
Cloning, subcellular localization and expression of chlI, a subunit of magnesium-chelatase in soybean.
Biochem. Biophys. Res. Commun. 215: 422-428.
57. N. Sato, Misumi, O., Joyard, J. and Douce, R. (1995)
DNA-binding proteins mediate interaction of nucleoids with envelope membrane in developing plastids.
In Photosynthesis: from Light to Biosphere. Edited by P. Mathis. Vol. III. pp. 635-638. Kluwer Academic Publishers, Dordrecht.
58. N. Sato and A. Wada (1996)
Disruption analysis of the gene for a cold-regulated RNA-binding protein, *rbpA1*, in *Anabaena*: Cold-induced initiation of the heterocyst differentiation pathway.
Plant Cell Physiol. 37: 1150-1160.
59. N. Sato and K. Maruyama (1997)
Differential regulation by low temperature of the gene for an RNA-binding protein, *rbpA3*, in the cyanobacterium *Anabaena variabilis* strain M3.
Plant Cell Physiol. 38: 81-86.

60. N. Ohta, N. Sato, K. Ueda and T. Kuroiwa (1997)
Analysis of a plastid gene cluster reveals a close relationship between *Cyanidioschyzon* and *Cyanidium*.
J. Plant Res. 110: 235-245.
61. N. Ohta, N. Sato, H. Nozaki and T. Kuroiwa (1997)
Analysis of the cluster of ribosomal protein genes in the plastid genome of a unicellular red alga *Cyanidioschyzon merolae*: Translocation of the *str* cluster as an early event in the Rhodophyte-Chromophyte lineage of plastid evolution.
J. Mol. Evol. 45: 688-695.
62. N. Sato, K. Maruyama, Y. Nishiyama and N. Murata (1997)
Identification of a cold-regulated RNA-binding protein from the marine cyanobacterium *Synechococcus* sp. PCC7002.
J. Plant Res. 110: 405-410.
63. N. Sato, T. Tachikawa, A. Wada and A. Tanaka (1997)
Temperature-dependent regulation of the ribosomal small subunit protein S21 in the cyanobacterium *Anabaena variabilis* M3.
J. Bacteriol. 179: 7063-7071.
64. N. Sato, O. Misumi, Y. Shinada, M. Sasaki and M. Yoine (1997)
Dynamics of localization and protein composition of plastid nucleoid in light-grown pea seedlings.
Protoplasma 200: 163-173.
65. N. Sato, K. Ohshima, A. Watanabe, N. Ohta, Y. Nishiyama, J. Joyard and R. Douce (1998)
Molecular characterization of the PEND protein, a novel bZIP protein present in the envelope membrane that is the site of nucleoid replication in developing plastids.
Plant Cell 10: 859-872.
66. N. Sato and A. Nakamura (1998)
Involvement of the 5'-untranslated region in cold-regulated expression of the *rbpA1* gene in the cyanobacterium *Anabaena variabilis* M3.
Nucleic Acids Res. 26: 2192-2199.
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Plant Cell Physiol. 39: 1367-1371.
68. N. Ohta, N. Sato and T. Kuroiwa (1998)
Structure and organization of the mitochondrial genome of the unicellular red alga *Cyanidioschyzon merolae* deduced from the complete nucleotide sequence.
Nucleic Acids Res. 26: 5190-5198.
69. K. Maruyama, N. Sato and N. Ohta (1999)
Conservation of structure and cold-regulation of RNA-binding proteins in cyanobacteria: probable convergent evolution with eukaryotic glycine-rich RNA-binding proteins.
Nucleic Acids Res. 27: 2029-2036.
70. N. Sato (2000)
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Bioinformatics 16: 180-181.
71. N. Sato, M. Nakayama and T. Hase (2001)
The 70-kDa major DNA-compacting protein of the chloroplast nucleoid is sulfite reductase.
FEBS Letters 487: 347-350.
72. K. Hashimoto and N. Sato (2001)

Characterization of the mitochondrial *nad7* gene in *Physcomitrella patens*: Similarity with angiosperm *nad7* genes.
Plant Science 160: 807-815.

73. N. Sato and N. Ohta (2001)
DNA-binding specificity and dimerization of the DNA-binding domain of the PEND protein in the chloroplast envelope membrane.
Nucleic Acids. Res. 29: 2244-2250.
74. M. Ohmori, M. Ikeuchi, N. Sato, P. Wolk, T. Kaneko, T. Ogawa, M. Kanehisa, S. Goto, S. Kawashima, S. Okamoto, H. Yoshimura, H. Katoh, T. Fujisawa, S. Ehira, A. Kamei, S. Yoshihara, R. Narikawa and S. Tabata (2001)
Characterization of genes encoding multi-domain proteins in the genome of the filamentous nitrogen-fixing cyanobacterium *Anabaena* sp. Strain PCC 7120.
DNA Research 8, 271-284.
75. N. Sasaki and N. Sato (2001)
3-D visualization for gene rearrangement in ternary comparison.
Genome Informatics 12: 462-463.
76. Y. Kabeya, K. Hashimoto and N. Sato (2002)
Identification and characterization of two phage-type RNA polymerase cDNAs in the moss *Physcomitrella patens*: Implication of recent evolution of nuclear-encoded RNA polymerase of plastids in plants.
Plant Cell Physiol. 43: 245-255.
77. K. Sekine, T. Hase and N. Sato (2002)
Reversible DNA compaction by sulfite reductase regulates transcriptional activity of chloroplast nucleoids.
J. Biol. Chem. 277: 24399-24404.
78. N. Sato (2002)
Comparative analysis of the genomes of cyanobacteria and plants.
Genome Informatics 13: 173-182.
79. N. Sato and S. Ehira (2003)
GenoMap, a circular genome data viewer.
Bioinformatics 19: 1583-1584.
80. S. Ehira, M. Ohmori and N. Sato (2003)
Genome-wide expression analysis of the responses to nitrogen deprivation in the heterocyst-forming cyanobacterium *Anabaena* sp. strain PCC 7120
DNA Research 10: 97-113.
81. S. Ehira, T. Hamano, T. Hayashida, K. Kojima, H. Nakamoto, T. Hiyama, M. Ohmori, S. Shivaji and N. Sato (2003)
Conserved temperature-dependent expression of RNA-binding proteins in cyanobacteria with different temperature optima
FEMS Microbiol. Lett. 225: 137-142.
82. N. Sato (2003)
Gclust: genome-wide clustering of protein sequences for identification of photosynthesis-related genes resulting from massive horizontal gene transfer.
Genome Informatics 14: 585-586.
83. T. Nomata, Y. Kabeya and N. Sato (2004)

Cloning and characterization of glycine-rich RNA-binding protein cDNAs in the moss *Physcomitrella patens*.
Plant Cell Physiol. 44 48-56.

84. Matsuzaki, M., Misumi, O., Shin-i, T., Maruyama, S., Takahara, M., Miyagishima, S., Mori, T., Nishida, K., Yagisawa, F., Nishida, K., Yoshida, Y., Nishimura, Y., Nakao, S., Kobayashi, T., Momoyama, Y., Higashiyama, T., Minoda, A., Sano, M., Nomoto, H., Oishi, K., Hayashi, H., Ohta, F., Nishizaka, S., Haga, S., Miura, S., Morishita, T., Kabeya, Y., Terasawa, K., Suzuki, Y., Ishii, Y., Asakawa, S., Takano, H., Ohta, N., Kuroiwa, H., Tanaka, K., Shimizu, N., Sugano, S., Sato, N., Nozaki, H., Ogasawara, N., Kohara, Y. and Kuroiwa, T. (2004)
Genome sequence of the ultrasmall unicellular red alga *Cyanidioschyzon merolae* 10D.
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85. Sato, N., Ohmori, M., Ikeuchi, M., Tashiro, K., Wolk, C. P., Kaneko, T., Okada, K., Tsuzuki, M., Ehira, S., Katoh, H., Okamoto, S., Yoshimura, H., Fujisawa, T., Kamei, A., Yoshihara, S., Narikawa, R., Hamano, T., Tabata, S. and Kuhara, S. (2004)
Use of segment-based microarray in the analysis of global gene expression in response to various environmental stresses in the cyanobacterium *Anabaena* sp. PCC 7120
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Characterization of RNA-binding properties of three types of RNA-binding proteins in *Anabaena* sp. PCC 7120
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88. K. Terasawa and N. Sato (2005)
Visualization of plastid nucleoids in situ using the PEND-GFP fusion protein
Plant Cell Physiol. 46: 649-660. (with cover figure)
89. K. Terasawa and N. Sato (2005)
Occurrence and characterization of PEND proteins in angiosperms
J. Plant Res. 118: 111-119.
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