

Regd with the Registrar of Newspapers for India vide Regn No. KARENG/1998/2115

Volume 25 (NS) Numbers 1 & 2 January – December 2024

THE JOURNAL OF CYTOLOGY AND GENETICS

CONTENTS

Assessment of Down syndrome with emphasis on congenital heart disease in Malappuram district V. JASEELA and H. HABEEBREHMAN	1
A study on the chromosomes of aphids of some common plants of Himachal Pradesh RITU SHARMA, MEENA KUMARI, DEVIKA VAIDYA, SEEMA SHARMA and SARITA KUMARI	9
Heredity of leaf orientation in onion and its relation to bulb yield B. B. MADALAGERI, PRAVEEN NOOJIBAIL and G. SHIVAKUMAR	15
A comparative study of the effect of two different doses of gamma rays on mitotic chromosomes of mouse <i>Mus musculus</i> PRANAB KUMAR DAS	21
Temperature and metal-stress induced DNA damage and histo-architectural changes in earthworm <i>Lampito mauritii</i> V. LATHA and P. MAHABOOB BASHA	35
Linear discriminant function analysis of two mutant varieties of <i>Plantago ovata</i> Forssk. using chromosome length measurements PRIYANKA SHAH, PRIYA PATEL and SANJAY KUMAR	45
Metallothionein expression in earthworm <i>Eudrilus eugeniae</i> exposed to heavy metals and temperature stress V. LATHA and P. MAHABOOB BASHA	49
Genetic mutation spectrum of gaucher disease in Indian population SHASHI CHAUDHARY	57
GC-MS analysis and antioxidant activity of root extract of <i>Gymnostachyum febrifugum</i> Benth. PRAJWAL KIRAN SALDANHA, L. RAJANNA and N. S. SURESHA	63
In vitro propagation of <i>Tylophora indica</i> (Burm. f.) Merr. var. <i>indica</i> : a threatened medicinal climber ANGELINE CYRIAC & M. ANILKUMAR	73
Qualitative phytochemical, HPTLC and HPLC analyses of leaf and bark extracts of <i>Dendrophthoe gamblei</i> L. RAJANNA and R.T. SATEESH	83
Genetic diversity analyses using ISSR markers on <i>Bacopa monnieri</i> occurring in Kerala CINTHYA CHRISTOPHER, K. K. SABU, P. J. MATHEW and P. M. MATHEW	93
Chromatographic and biochemical characterization of phytochemicals in leaf extracts of <i>Pseuderanthemum bicolor</i> (Schrank) Radlk. ex Lindau B. S. RAMESH, L. RAJANNA and N. S. SURESHA	107
<i>Ampelocalamus patellaris</i> : a unique bamboo with chromosomal mosaicism A. JERO MATHU, P. J. MATHEW, B. GOPAKUMAR and K. C. KOSHY	115
<b>Obituary:</b> Professor P. M. Mathew P. J. MATHEW	123

ISSUED 31st DECEMBER 2024

Edited and published by B. H. M. Nijalingappa, Flat No. 22114, Tower 22, Prestige Shantiniketan, Whitefield Road, Bengaluru - 560 048 for the Society of Cytologists and Geneticists. Ph.: 98451 08449, Email: bhmni@gmail.com.  
Printed at Ganesha Offset Printers, No. 56/6-6, 11th Main, 9th Cross, Shakambari Nagar, Sarakki, J. P. Nagar 1st Phase, Bengaluru - 560 078. Ph: 080 2244 3281, 4377 8613, Email : ganeshaoffsetprinters@gmail.com  
For free access of papers visit: <http://www.socg.in>

ISSN 0253-7605

VOLUME 25 (NS) NUMBERS 1 & 2

JANUARY - DECEMBER 2024

THE JOURNAL OF  
CYTOLOGY  
AND  
GENETICS

(UGC-Approved Journal)

Volume 25 (NS) Nos 1 & 2

The Journal of Cytology and Genetics

January – December 2024

## THE JOURNAL OF CYTOLOGY AND GENETICS

### Editor

**B. H. M. Nijalingappa**, Bengaluru

### Associate Editor

**Meena Kumari**, Shimla

### Members of the Editorial Board

**Ashalatha S. Nair**, Thiruvananthapuram

**P. Jyothilekshmi**, Nemmara

**Manoj M. Lekhak**, Kolhapur

**B. Vasanthakumari**, Chunkankadai

### EDITORIAL OFFICE

Flat No. 22114, Tower 22, Prestige Shantiniketan, Whitefield Road, Bengaluru - 560 048, India.

Ph : 080-23387421, +91 98451 08449.

Email: [bhmnij@gmail.com](mailto:bhmnij@gmail.com)

All articles published in the journal are freely accessible on Society's website : <http://www.socg.in>

The Journal of Cytology and Genetics, founded in 1966, welcomes original research articles in any area of plant and animal cytogenetics, cell and molecular biology including molecular systematics of plants and animals and biotechnology including those of interdisciplinary nature. Two issues form one volume published in June and December every year. All articles published in the journal have been reviewed by the referees and are deemed to reflect the individual opinions of authors and not of the publisher.

### SOCIETY OF CYTOLOGISTS AND GENETICISTS, INDIA (FOUNDED 1965)

#### EXECUTIVE COUNCIL

##### President

**R. C. Verma**, Ujjain

##### Vice-Presidents

**B. H. M. Nijalingappa**, Bengaluru

**A. K. Srivastava**, Meerut (Ex-Officio)

##### Secretary

**M. C. Gayatri**, Bengaluru

##### Joint Secretaries

**L. Rajanna**, Bengaluru

**B. E. Rangaswamy**, Davangere

##### Treasurer

**H. M. Revanasiddaiah**, Bengaluru

##### Members

**N. B. Gaikwad**, Kolhapur

**S. Suhara Beevy**, Thiruvananthapuram

**V. Devipriya**, Thiruvananthapuram

**C. G. Patil**, Dharwad

**P. G. Pillai**, Thiruvananthapuram

**R. P. Saharan**, Hissar

**S. R. Yadav**, Kolhapur

**Jasmine M. Shah**, Kasaragod

**Anjali Agarwal**, Nainital

### SECRETARIAT

**Prof. M. C. Gayatri**, Hon. Secretary, Society of Cytologists and Geneticists,

# 1387, 'Gayatri Nilaya', I 'D' Main, Eleventh Cross, Kengeri Upanagara,

Bengaluru 560 060, India. Email: [gayatrimc2011@gmail.com](mailto:gayatrimc2011@gmail.com)

Ph : +91 98455 08622

All correspondence concerning individual membership of the Society and journal subscription should be addressed to the Hon. Secretary, SCG.

### INFORMATION FOR AUTHORS

The Journal of Cytology and Genetics accepts reviews, full-length articles not exceeding 10 pages (approx. 20 manuscript pages including figures and tables) and short communications not more than 3 pages (within 2000 words) in the areas of cytology, genetics, biotechnology, molecular biology and allied subjects. Submission of the manuscript implies that the work has not been previously published and is not under consideration for publication elsewhere and if accepted it will not be published elsewhere. Two copies of the manuscript with a set of original figures and photographs along with its soft copy are to be submitted to the editor, **Prof. B. H. M. Nijalingappa, Flat No. 22114, Tower 22, Prestige Shantiniketan, Whitefield Road, Bengaluru - 560 048, India. Email: [bhmnij@gmail.com](mailto:bhmnij@gmail.com).**

While preparing the manuscript, the format followed in the latest issue of the journal shall strictly be adhered to. The **manuscript** should be typed on one side, double-spaced with a 30 mm margin on all sides and completely ready for typesetting. The **title page** should include a brief and specific title of the paper, name(s) of author(s), affiliation(s) and address for correspondence including Email ID. The material must be clearly arranged under appropriate headings and presented in a good, readable style. Each contribution should be preceded by a summary. Immediately after the **SUMMARY**, 3-5 **Keywords** indicating the scope of the paper must be provided. Genus and species names should be in *italics*. Complete scientific name should be given when organisms are first mentioned. The genus name may subsequently be abbreviated to the initial. **Tables** prepared in conformity with the journal's style must be numbered consecutively with arabic numerals and submitted separately from the text at the end of the paper. Each table shall have a short self-explanatory title. **Vertical and horizontal lines within the table are not allowed.** Data given in graphs or tables should not be repeated in the text. All pages of the manuscript including tables and figure legends should be numbered consecutively. **Symbols** should be well defined and used consistently in figures, tables and text (lower case or capital letters, arabic or roman numerals). Citation of **References** in the text as follows: Girish & Saidapur (2003) or (Engell 1994). If there are more than two authors, only the first should be named followed by et al. If there is more than one work from the same author(s) or team of authors in the same year, the letter a, b, c etc. is added to the year both in the text and in the list of References. Listing of references in the text should be alphabetical e.g. (Adams 1989, Bell & Tora 1999, Prasad et al. 2002, Shao & Tu 2001) or chronological. **Units of measure** should be **metric** and conform to **SI notation** e.g., g, mg, m, cm, mm,  $\mu$ m, l etc. and likewise duration should be abbreviated e.g., h, min, sec, d, wks, y and none of them should be followed by full points unless they appear at the end of the sentence. Figures should be submitted as high quality glossy photographic prints (singly or as composite photographs) or as line drawings neatly executed in black ink suitable for full page reproduction. Illustrations must be restricted to the minimum needed to clarify the text. The figures should be set to match the printing area (15 x 17 cm). All figures (including graphs or diagrams) are to be numbered consecutively throughout and submitted separately. **Figures should not be designated with letters.** Both in the text and legends, the figures should be referred to as Fig. 1, 2, 3 and so on. Legend should be short and appended to the text. They should provide a brief, self-sufficient description of each figure. Like tables, legends should also be submitted on separate sheets following the main text. Under **References** works that are cited in the text should be listed in alphabetical order under the first author's name. Journal titles should be abbreviated in accordance with the rules set by *Chemical Abstracts*.

#### Examples:

APG IV 2016 An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV *Bot J Linn Soc* **181** 1-20

GRIMALDI D & ENGEL M S 2005 *Evolution of the insects* Cambridge University Press Cambridge

BURES P, ZEDEK F & MARIKOVA M 2013 Holocentric chromosomes In Leitch I J Greilhuber J Dolezel J & Wendel J F (eds) *Plant Genome diversity* Vol 2 Springer-Verlag Vienna pp 187-208

SCHUBERT V, RUBANA A & HOUBENA A 2016 Chromatin ring formation at plant centromeres *Front Plant Sci* 7 28 doi:10.3389/fpls.2016.00028

**Page proofs** will be emailed to contributors for correction of typographical errors and should be returned within 3 days by email. **No offprints are supplied gratis.** However, 25 offprints will invariably be supplied at cost price. All payments towards reprints, extra pagination, plates, tables etc. should be made in advance through NEFT in favour of the **Treasurer, Society of Cytologists and Geneticists** payable to **State Bank of India, Nagarabhavi Branch, Bengaluru. S.B. A/c No.54047022485. IFSC: SBIN0040211. Branch code: 40211.**