Web of Science™

JNU publications for the month of September, 2024

Record 1 of 29

Title: Evaluating non-western disturbances winter precipitation over the western Himalayas

Author(s): Pooja (Pooja, A. P.); Dimri, AP (Dimri, A. P.)

Source: CLIMATE DYNAMICS **DOI:** 10.1007/s00382-024-07431-8 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 13

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 25

Abstract: Western Himalayas (WH) receives precipitation through eastward propagating synoptic weather systems, Western Disturbances (WDs), embedded in large scale subtropical westerly jet (SWJ) during Northern Hemispheric boreal winter (December, January and February; DJF). In the recent decade, WDs have undergone certain changes in their characteristic's viz., decreased associated precipitation, no significant changes in the WDs frequency and intensity, etc. However, Non-WDs days and associated precipitation gained its importance as it contributes similar to 20% of winter precipitation over WH. In this study, structure, dynamics and moisture availability associated with changing WDs and Non-WDs precipitating days are analyzed. Robust statistical methods and Theil-Sen slope on ERA5 data during 1987-2020 is considered to comprehend why active WDs' (Non-WDs) precipitation frequency is declining (notably increasing). Interestingly, it is as well found that all the WDs do not precipitate and there are Non-WDs days when precipitation occur. It shows declining trend in WD precipitation and the increasing importance of Non-WDs. The findings show formation of 'Omega shape' flow - where high pressure is locked between two low pressure systems - over Indian subcontinent during Non-WDs days. Such dynamical wind col formation ('Omega shape') from lower (850Hpa) to upper (200 hPa) troposphere provides conducive situation for enhanced moisture incursion from Bay of Bengal (BoB) towards and over the WH during Non-WDs days leading to precipitation. This new finding needs to be looked from sustaining and replenishment of glaciers; agriculture; socioeconomic benefits during winters and needs to be addressed.

Accession Number: WOS:001312258800001

Language: English

Document Type: Article; Early Access

Author Keywords: Non-WDs days; Winter precipitation; Western disturbances; Omega shape flow; infinity shape formation; Secondary WDs

KeyWords Plus: CLIMATE-CHANGE; RESOLUTION

Addresses: [Pooja, A. P.; Dimri, A. P.] Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi, India.

Corresponding Address: Dimri, AP (corresponding author), Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi, India.

E-mail Addresses: apdimri@hotmail.com

Affiliations: Jawaharlal Nehru University, New Delhi

Publisher: SPRINGER

Publisher Address: ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Meteorology & Atmospheric Sciences

Research Areas: Meteorology & Atmospheric Sciences

IDS Number: F8L2F

ISSN: 0930-7575

eISSN: 1432-0894

29-char Source Abbrev.: CLIM DYNAM

ISO Source Abbrev.: Clim. Dyn.

Source Item Page Count: 13

Funding:

Funding Agency	Grant Number
Indian Institute of Geomagnetism (IIG), Department of Science and Technology, India	

The authors are thankful to the European Centre for Medium-Range Weather Forecasts (ECMWF) for reanalysis data. This work is supported by the Indian Institute of Geomagnetism (IIG), Department of Science and Technology, India.

Output Date: 2024-10-01

Record 2 of 29

Title: Federated learning based multi-head attention framework for medical image classification

Author(s): Firdaus, N (Firdaus, Naima); Raza, Z (Raza, Zahid)

Source: CONCURRENCY AND COMPUTATION-PRACTICE & EXPERIENCE **DOI:** 10.1002/cpe.8280 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 13

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 51

Abstract: In this study, we propose a novel Federated Learning Based Multi-Head Attention (FBMA) framework for image classification problems considering the Independent and Identically Distributed (IID) and Non-Independent and Identically Distributed (Non-IID) medical data. The FBMA architecture integrates FL principles with the Multi-Head Attention mechanism, optimizing the model performance and ensuring privacy. Using Multi-Head Attention, the FBMA framework allows the model to selectively focus on important regions of the image for feature extraction, and using FL, FBMA leverages decentralized medical institutions to facilitate collaborative model training while maintaining data privacy. Through rigorous experimentation on medical image datasets: MedMNIST Dataset, MedicalMNIST Dataset, and LC25000 Dataset, each partitioned into Non-IID data distribution, the proposed FBMA framework exhibits high-performance metrics. The results highlight the efficacy of our proposed FBMA framework, indicating its potential for real-world applications where image classification demands both high accuracy and data privacy.

Accession Number: WOS:001310795800001

Language: English

Document Type: Article; Early Access

Author Keywords: convolutional neural network; deep learning; federated learning; medical image classification; multi-head attention mechanism

KeyWords Plus: ACCURACY; MODELS

Addresses: [Firdaus, Naima; Raza, Zahid] Jawaharlal Nehru Univ, Sch Comp & Syst Sci, New Delhi, India.

Corresponding Address: Firdaus, N (corresponding author), Jawaharlal Nehru Univ, Sch Comp & Syst Sci, New Delhi, India.

E-mail Addresses: naimaf59_scs@jnu.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Firdaus, Naima		0000-0002-4067-2448

Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Computer Science, Software Engineering; Computer Science, Theory & Methods

Research Areas: Computer Science

IDS Number: F6G9Z

ISSN: 1532-0626

eISSN: 1532-0634

29-char Source Abbrev.: CONCURR COMP-PRACT E

ISO Source Abbrev.: Concurr. Comput.-Pract. Exp.

Source Item Page Count: 28

Output Date: 2024-10-01

Record 3 of 29

Title: House of the People: Parliament and the Making of Indian Democracy

Author(s): Jha, S (Jha, Shefali)

Source: INDIAN ECONOMIC AND SOCIAL HISTORY REVIEW **DOI:** 10.1177/00194646241281184 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 21

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 0

Abstract: Ronojoy Sen, House of the People: Parliament and the Making of Indian Democracy (Cambridge: Cambridge University Press, 2022), 311 pp.

Accession Number: WOS:001318372800001

Language: English

Document Type: Book Review; Early Access

Addresses: [Jha, Shefali] Jawaharlal Nehru Univ, New Delhi, India.

Corresponding Address: Jha, S (corresponding author), Jawaharlal Nehru Univ, New Delhi, India.

E-mail Addresses: shefalimh@yahoo.com

Affiliations: Jawaharlal Nehru University, New Delhi

Publisher: SAGE PUBLICATIONS INDIA PVT LTD

Publisher Address: B-1-I-1 MOHAN CO-OPERATIVE INDUSTRIAL AREA, MATHURA RD, POST BAG NO 7, NEW DELHI 110 044, INDIA

Web of Science Index: Social Science Citation Index (SSCI); Arts & Humanities Citation Index (A&HCI)

Web of Science Categories: History

Research Areas: History

IDS Number: G7K1R

ISSN: 0019-4646

eISSN: 0973-0893
29-char Source Abbrev.: INDIAN ECON SOC HIST
ISO Source Abbrev.: Indian Econ. Soc. Hist. Rev.
Source Item Page Count: 3
Output Date: 2024-10-01

Record 4 of 29

Title: Prediction of Ca²⁺ Binding Site in Proteins With a Fast and Accurate Method Based on Statistical Mechanics and Analysis of Crystal Structures

Author(s): Basit, A (Basit, Abdul); Choudhury, D (Choudhury, Devapriya); Bandyopadhyay, P (Bandyopadhyay, Pradipta)

Source: PROTEINS-STRUCTURE FUNCTION AND BIOINFORMATICS **DOI:** 10.1002/prot.26743 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 11

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 2

Usage Count (Since 2013): 2

Cited Reference Count: 97

Abstract: Predicting the precise locations of metal binding sites within metalloproteins is a crucial challenge in biophysics. A fast, accurate, and interpretable computational prediction method can complement the experimental studies. In the current work, we have developed a method to predict the location of Ca2+ ions in calcium-binding proteins using a physics-based method with an all-atom description of the proteins, which is substantially faster than the molecular dynamics simulation-based methods with accuracy as good as data-driven approaches. Our methodology uses the three-dimensional reference interaction site model (3D-RISM), a statistical mechanical theory, to calculate Ca2+ ion density around protein structures, and the locations of the Ca2+ ions are obtained from the density. We have taken previously used datasets to assess the efficacy of our method as compared to previous works. Our accuracy is 88%, comparable with the FEATURE program, one of the well-known data-driven methods. Moreover, our method is physical, and the reasons for failures can be ascertained in most cases. We have thoroughly examined the failed cases using different structural and crystallographic measures, such as B-factor, R-factor, electron density map, and geometry at the binding site. It has been found that x-ray structures have issues in many of the failed cases, such as geometric irregularities and dubious assignment of ion positions. Our algorithm, along with the checks for structural accuracy, is a major step in predicting calcium ion positions in metalloproteins.

Accession Number: WOS:001310070500001

PubMed ID: 39258438

Language: English

Document Type: Article; Early Access

Author Keywords: 3D-RISM; calcium ion prediction in proteins; improved curation of structures; statistical mechanics; validation with x-ray structures

KeyWords Plus: CA2+-BINDING SITES; ION-BINDING; METAL; CALCIUM; VALIDATION; PARAMETERS; DENSITY; NMR; CRYSTALLOGRAPHY; METALLOPROTEIN

Addresses: [Basit, Abdul; Bandyopadhyay, Pradipta] Jawaharlal Nehru Univ, Sch Computat & Integrat Sci, New Delhi, India.
[Choudhury, Devapriya] Jawaharlal Nehru Univ, Sch Biotechnol, New Delhi, India.

Corresponding Address: Bandyopadhyay, P (corresponding author), Jawaharlal Nehru Univ, Sch Computat & Integrat Sci, New Delhi, India.

E-mail Addresses: praban07@gmail.com

Affiliations: Jawaharlal Nehru University, New Delhi; Jawaharlal Nehru University, New Delhi

Publisher: WILEY
Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA
Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)
Web of Science Categories: Biochemistry & Molecular Biology; Biophysics
Research Areas: Biochemistry & Molecular Biology; Biophysics
IDS Number: F5F3L
ISSN: 0887-3585
eISSN: 1097-0134
29-char Source Abbrev.: PROTEINS
ISO Source Abbrev.: Proteins
Source Item Page Count: 16
Funding:

Funding Agency	Grant Number
Science and Engineering Research Board	BT/PR45865/BID/7/1016/2023
Department of Biotechnology (DBT) grant	BT/PR/40251/BITS/137/11/2021
DBT	
Jawaharlal Nehru University	MTR/2021/000365
MATRICS grant from SERB	

A.B. would like to thank Dr. Rakesh Srivastava for valuable discussions. This work is supported by a Department of Biotechnology (DBT) grant (BT/PR45865/BID/7/1016/2023) awarded to P.B. This work was also partially supported by grants from the DBT (BT/PR/40251/BITS/137/11/2021) awarded to the Centre for Computational Biology and Bioinformatics, Jawaharlal Nehru University and the MATRICS grant from SERB (MTR/2021/000365) awarded to P.B.
Output Date: 2024-10-01

Record 5 of 29

Title: Determinants of livelihood vulnerability to climate change among the agrarian community: Empirical evidence from the coastal region of Indian Sundarban Biosphere Reserve

Author(s): Das, S (Das, Shibu)

Source: REGIONAL STUDIES IN MARINE SCIENCE **Volume:** 78 **Article Number:** 103777 **DOI:** 10.1016/j.rsma.2024.103777 **Early Access Date:** SEP 2024 **Published Date:** 2024 DEC 15
Times Cited in Web of Science Core Collection: 0
Total Times Cited: 0
Usage Count (Last 180 days): 0
Usage Count (Since 2013): 0
Cited Reference Count: 66

Abstract: The impacts of climate change on the livelihood of agrarian households on the coast of the Indian Sundaraban Biosphere Reserve have not been addressed. Thus, it is important to identify the underlying factors for livelihood vulnerability in this region and know how climate change-related events and socio-economic conditions affect them. This work aimed to measure six major domains of livelihood vulnerability, such as overall livelihood loss, livestock loss, crop and crop area loss, fishing area loss, housing loss, and income loss. I selected the ordered probit regression and focus group discussion approaches. Results revealed that the significant determinant factors of livelihood vulnerability were early warning system, education, land holding size, social group, type of house, occupation, distance to the local market and health centre, membership of self-help group, agreement with summer temperature increased, cyclone increased, flood increased, drought in Kharif season increased. In this region, several agrarian households have taken some adaptation measures such

as changing crop varieties, crop diversification, converting agriculture to fishery, and saline tolerant varieties. This approach is adaptable and can be put into practice on different levels, not just in other parts of India but also in diverse developing countries.

Accession Number: WOS:001311559600001

Language: English

Document Type: Article

Author Keywords: Agrarian community; Climate change; Coastal region of Indian Sundarban Biosphere Reserve; Determinant factors; Livelihood vulnerability; Mixed method approach; Mixed method approach

KeyWords Plus: HOUSEHOLD VULNERABILITY; IMPACT; HAZARDS; LEVEL; MODEL

Addresses: [Das, Shibu] Jawaharlal Nehru Univ, Ctr Study Reg Dev CSRD, Sch Social Sci SSS, New Delhi 110067, India.

Corresponding Address: Das, S (corresponding author), Jawaharlal Nehru Univ, Ctr Study Reg Dev CSRD, Sch Social Sci SSS, New Delhi 110067, India.

Affiliations: Jawaharlal Nehru University, New Delhi

Publisher: ELSEVIER

Publisher Address: RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Ecology; Marine & Freshwater Biology

Research Areas: Environmental Sciences & Ecology; Marine & Freshwater Biology

IDS Number: F7K3I

ISSN: 2352-4855

29-char Source Abbrev.: REG STUD MAR SCI

ISO Source Abbrev.: Reg. Stud. Mar. Sci.

Source Item Page Count: 19

Output Date: 2024-10-01

Record 6 of 29

Title: Switching from positive to negative thermal expansion in a tetrayne-diol compound

Author(s): Sethi, T (Sethi, Tapaswini); Das, D (Das, Dinabandhu)

Source: CRYSTENGCOMM **Volume:** 26 **Issue:** 37 **Pages:** 5133-5137 **DOI:** 10.1039/d4ce00703d **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 23

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 65

Abstract: Switching from positive (PTE) to negative thermal expansion (NTE) in a molecular crystal is a rare phenomenon. Here we report the switching of PTE to NTE in 1,1 '-(octa-1,3,5,7-tetrayne-1,8-diyl)dicyclopentanol (1) along the crystallographic a-axis. Small PTE has been observed from 100 K to 200 K due to zigzag packing arrangement and then the large transverse vibration overpowers the PTE resulting in NTE after 200 K.
Switching from positive to negative thermal expansion has been observed in 1,1 '-(octa-1,3,5,7-tetrayne-1,8-diyl)dicyclopentanol due to a certain packing pattern and transverse vibration of atoms.

Accession Number: WOS:001308700200001

Language: English

Document Type: Article

KeyWords Plus: COLOSSAL; ZERO

Addresses: [Sethi, Tapaswini; Das, Dinabandhu] Jawaharlal Nehru Univ, Sch Phys Sci, New Delhi 110067, India.

Corresponding Address: Das, D (corresponding author), Jawaharlal Nehru Univ, Sch Phys Sci, New Delhi 110067, India.

E-mail Addresses: jnu.dinu@gmail.com

Affiliations: Jawaharlal Nehru University, New Delhi

Publisher: ROYAL SOC CHEMISTRY

Publisher Address: THOMAS GRAHAM HOUSE, SCIENCE PARK, MILTON RD, CAMBRIDGE CB4 0WF, CAMBS, ENGLAND

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Chemistry, Multidisciplinary; Crystallography

Research Areas: Chemistry; Crystallography

IDS Number: G6B9M

eISSN: 1466-8033

29-char Source Abbrev.: CRYSTENGCOMM

ISO Source Abbrev.: Crystengcomm

Source Item Page Count: 5

Funding:

Funding Agency	Grant Number
Department of Science and Technology, Ministry of Science and Technology, India	
DST	

TS and DD acknowledge DST for providing financial support under project no DST/INT/South Africa/P-02/2021. DD thanks DST for providing SCD, DSC and TGA facilities in SPS under the FIST program.

Output Date: 2024-10-01

Record 7 of 29

Title: Cosmopolitan elites: Indian diplomats and the social hierarchies of global order

Author(s): Guha, P (Guha, Pausali)

Source: INTERNATIONAL AFFAIRS **Volume:** 100 **Issue:** 5 **Pages:** 2282-2283 **DOI:** 10.1093/ia/iiae188 **Published Date:** 2024 SEP 9

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 0

Accession Number: WOS:001315125500001

Language: English

Document Type: Book Review

Addresses: [Guha, Pausali] Jawaharlal Nehru Univ, Delhi, India.

Corresponding Address: Guha, P (corresponding author), Jawaharlal Nehru Univ, Delhi, India.

Affiliations: Jawaharlal Nehru University, New Delhi

Publisher: OXFORD UNIV PRESS

Publisher Address: GREAT CLARENDON ST, OXFORD OX2 6DP, ENGLAND

Web of Science Index: Social Science Citation Index (SSCI)

Web of Science Categories: International Relations
Research Areas: International Relations
IDS Number: G2Q0F
ISSN: 0020-5850
eISSN: 1468-2346
29-char Source Abbrev.: INT AFF
ISO Source Abbrev.: Int. Aff.
Source Item Page Count: 2
Output Date: 2024-10-01

Record 8 of 29

Title: An enhanced localization algorithm for 3D wireless sensor networks using group learning optimization

Author(s): Niranjan, M (Niranjan, Maheshwari); Sinha, A (Sinha, Adwitiya); Singh, B (Singh, Buddha)

Source: SADHANA-ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES **Volume:** 49 **Issue:** 3 **Article Number:** 248 **DOI:** 10.1007/s12046-024-02588-8 **Published Date:** 2024 SEP 3

Abstract: Localization in sensor communication is considered one of the most foundational concepts that facilitates targeted monitoring, optimized deployment, and real-time navigation. The localization algorithms have several applications, including asset tracking, environmental monitoring, industrial automation, and other location-based services. This drives the need for continually refining and enhancing localization techniques for three-dimensional sensor networks. The DV-Hop is a widely used localization technique owing to its lesser range requirements, easy to implement, and suitable for large-scale network of sensors. In this research, we have proposed an enhanced group learning optimization-based three-dimensional DV-Hop algorithm, termed as GL-3DDVHop. The proposed method overcomes the limitations of the original variant of DV-Hop and extended it to three-dimensional environment. In the proposed approach, the communication ring partitioning-based location aware node selection approach is developed to calculate the hopsize of location aware node. The correction factor for hopsize refinement is also added to obtain the corrected distances between location unaware node and location aware nodes in terms of the modified hopsize and hop count. Finally, group learning optimization technique is used to estimate the position coordinates of location unaware nodes. According to our experimentation conducted for 3D wireless sensor network, the localization accuracy of GL-3DDVHop surpassed its existing counterparts, namely 3DDV-Hop and PSO-3DDVHop techniques by 9% and 3%, respectively.

Accession Number: WOS:001304016600001
Language: English
Document Type: Article
Author Keywords: Wireless sensor network; Localization; Hop-size correction; Group learning optimization; DV-hop localization
KeyWords Plus: PARTICLE SWARM OPTIMIZATION; RANGE-FREE LOCALIZATION

Addresses: [Niranjan, Maheshwari; Singh, Buddha] Jawaharlal Nehru Univ, Sch Comp & Syst Sci, New Delhi, India.
[Sinha, Adwitiya] TERI Sch Adv Studies, Nat & Appl Sci, New Delhi, India.
Corresponding Address: Sinha, A (corresponding author), TERI Sch Adv Studies, Nat & Appl Sci, New Delhi, India.
E-mail Addresses: niranjan.maheshwari7@gmail.com; mailtoadwitiya@gmail.com; b.singh.jnu@gmail.com

Affiliations: Jawaharlal Nehru University, New Delhi; TERI University

Publisher: SPRINGER INDIA

Publisher Address: 7TH FLOOR, VIJAYA BUILDING, 17, BARAKHAMBA ROAD, NEW DELHI, 110 001, INDIA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Engineering, Multidisciplinary

Research Areas: Engineering

IDS Number: E6I3K

ISSN: 0256-2499

eISSN: 0973-7677

29-char Source Abbrev.: SADHANA-ACAD P ENG S

ISO Source Abbrev.: Sadhana-Acad. Proc. Eng. Sci.

Source Item Page Count: 16

Output Date: 2024-10-01

Record 9 of 29

Title: Deciphering Sino-Indian blue mining competencies in the Indo-Pacific

Author(s): Yadav, D (Yadav, Dhanwati)

Source: MARINE POLICY **Volume:** 170 **Article Number:** 106378 **DOI:** 10.1016/j.marpol.2024.106378 **Early Access Date:** SEP 2024 **Published Date:** 2024 DEC

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 71

Abstract: Minerals beneath the sea are posited to have a ripple effect on the country's economy. An incessant rush to ocean mining by nations has launched a costly battle for minerals never precedented. China, in the race has emerged a prospective performer after charging the global electronic market direly fed by critical minerals. The imported rare earth by China is of special significance here in prolonging its strategic monopoly over the supply of minerals and rare earth derivatives to the world. India, another pioneer investor with a promising economy, is also increasingly scrambling to mine the deep sea for its mineral satiety and to overcome its longstanding dependency on Beijing. China's ascending control in the international rare earth market has also had a strategic impact on other countries, who are hunting for an alternative to China's sway. India, with its developing capabilities in undersea mining and partnered manufacturing of high-end products could settle their quest at large. Its advances in seabed mining are also eulogized by the ISA (director). The paper, given this backdrop probes into certain aspects vital to uncover the competencies of India and China in securing their multi-layered blue mining goals. This may immensely interest the world economies that inexorably have a bearing of the globalized supply chain of minerals and propose for resource-based geopolitics.

Accession Number: WOS:001309910200001

Language: English

Document Type: Article

Author Keywords: Seabed mining; Strategic; India; China; ISA; Critical minerals

Addresses: [Yadav, Dhanwati] Univ Delhi, Dyal Singh Coll Eve, Dept Polit Sci, New Delhi 110003, India. [Yadav, Dhanwati] Jawaharlal Nehru Univ, New Delhi, India.

Corresponding Address: Yadav, D (corresponding author), Univ Delhi, Dyal Singh Coll Eve, Dept Polit Sci, New Delhi 110003, India.

E-mail Addresses: dhanwati05@gmail.com

Affiliations: University of Delhi; Jawaharlal Nehru University, New Delhi
Publisher: ELSEVIER SCI LTD
Publisher Address: 125 London Wall, London, ENGLAND
Web of Science Index: Social Science Citation Index (SSCI)
Web of Science Categories: Environmental Studies; International Relations
Research Areas: Environmental Sciences & Ecology; International Relations
IDS Number: F4Z3B
ISSN: 0308-597X
eISSN: 1872-9460
29-char Source Abbrev.: MAR POLICY
ISO Source Abbrev.: Mar. Pol.
Source Item Page Count: 9
Output Date: 2024-10-01

Record 10 of 29

Title: PerR: A Peroxide Sensor Eliciting Metal Ion-dependent Regulation in Various Bacteria

Author(s): Kandari, D (Kandari, Divya); Joshi, H (Joshi, Hemant)

Source: MOLECULAR BIOTECHNOLOGY **DOI:** 10.1007/s12033-024-01266-8 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 18

Abstract: Bacteria have to thrive in difficult conditions wherein their competitors generate partially reduced forms of oxygen, like hydrogen peroxide and superoxides. These oxidative stress molecules can also arise from within via the autoxidation of redox enzymes. To adapt to such conditions, bacteria express detox enzymes as well as repair proteins. Transcription factors regulate these defenses, and PerR is one of them. PerR is a Fur family transcriptional regulator that senses peroxide stress. Metal-bound PerR (either Mn2+ or Fe2+) can repress transcription of its regulon, but only the Fe2+-bound form of PerR can sense H2O2. This review describes different aspects of PerR and its varied roles, specifically in bacterial pathogens. Despite having roles beyond sensing peroxides, it is an underrated regulator that needs to be explored more deeply in pathogens.

Accession Number: WOS:001315053900001
PubMed ID: 39294512
Language: English
Document Type: Review; Early Access
Author Keywords: Oxidative stress; Pathogenic bacteria; Metalloregulator; Virulence; Transcription factor
KeyWords Plus: OXIDATIVE STRESS RESISTANCE; BACILLUS-SUBTILIS; HYDROGEN-PEROXIDE; CRYSTAL-STRUCTURE; IRON; VIRULENCE; FUR; REGULON; MANGANESE; CATALASE

Addresses: [Kandari, Divya; Joshi, Hemant] Jawaharlal Nehru Univ, Sch Biotechnol, New Delhi 110067, India.
[Joshi, Hemant] Univ Calif San Francisco, Div Expt Med, San Francisco, CA 94107 USA.
Corresponding Address: Joshi, H (corresponding author), Jawaharlal Nehru Univ, Sch Biotechnol, New Delhi 110067, India.
Joshi, H (corresponding author), Univ Calif San Francisco, Div Expt Med, San Francisco, CA 94107 USA.
E-mail Addresses: hemant17_sbt@jnu.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi; University of California System; University of California San Francisco

Publisher: SPRINGERNATURE

Publisher Address: CAMPUS, 4 CRINAN ST, LONDON, N1 9XW, ENGLAND

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Biochemistry & Molecular Biology; Biotechnology & Applied Microbiology

Research Areas: Biochemistry & Molecular Biology; Biotechnology & Applied Microbiology

IDS Number: G2N3D

ISSN: 1073-6085

eISSN: 1559-0305

29-char Source Abbrev.: MOL BIOTECHNOL

ISO Source Abbrev.: Mol. Biotechnol.

Source Item Page Count: 12

Output Date: 2024-10-01

Record 11 of 29

Title: Surface-directed dynamics in living liquid crystals

Author(s): Vats, A (Vats, Aditya); Banerjee, V (Banerjee, Varsha); Puri, S (Puri, Sanjay)

Source: PHYSICAL REVIEW E **Volume:** 110 **Issue:** 3 **Article Number:** 034701 **DOI:** 10.1103/PhysRevE.110.034701 **Published Date:** 2024 SEP 3

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 63

Abstract: We study living liquid crystals (LLCs), which are an amalgam of nematic liquid crystals (LCs) and active matter (AM). These LLCs are placed in contact with surfaces which impose planar/homeotropic boundary conditions on the director field of the LC and the polarization field of the AM. The interplay of LC-AM interactions and the surface-directed conditions yield controlled pattern dynamics in the LLC, which has important technological implications. We discuss two representative examples of this pattern dynamics.

Accession Number: WOS:001309864400006

Language: English

Document Type: Article

KeyWords Plus: BACTERIA; DEFECTS

Addresses: [Vats, Aditya; Banerjee, Varsha] Indian Inst Technol Delhi, Dept Phys, New Delhi 110016, India. [Puri, Sanjay] Jawaharlal Nehru Univ, Sch Phys Sci, New Delhi 110067, India.

Corresponding Address: Vats, A (corresponding author), Indian Inst Technol Delhi, Dept Phys, New Delhi 110016, India.

Affiliations: Indian Institute of Technology System (IIT System); Indian Institute of Technology (IIT) - Delhi; Jawaharlal Nehru University, New Delhi

Publisher: AMER PHYSICAL SOC

Publisher Address: ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Physics, Fluids & Plasmas; Physics, Mathematical

Research Areas: Physics

IDS Number: F4X5L

ISSN: 2470-0045
eISSN: 2470-0053
29-char Source Abbrev.: PHYS REV E
ISO Source Abbrev.: Phys. Rev. E
Source Item Page Count: 10
Funding:

Funding Agency	Grant Number
UGC, India	
DST, India	
SERB, India	

A.V. acknowledges UGC, India for support via a research fellowship. V.B. acknowledges DST, India for research grants. A.V. and V.B. gratefully acknowledge the HPC facility of IIT Delhi for computational resources. We are grateful to the referees for their constructive comments and suggestions. S.P. is grateful to SERB, India for support through a J.C. Bose fellowship.

Open Access: Green Submitted
Output Date: 2024-10-01

Record 12 of 29

Title: Design and Simulation of Circular Dielectric Resonator Antenna and Investigation of Structure, Microstructure, and Dielectric Properties of Mn-Modified Sr₂SnO₄

Author(s): Kumar, U (Kumar, Upendra); Yadav, V (Yadav, Vedika); Kumar, R (Kumar, Raj); Singh, P (Singh, Pinki)

Source: PHYSICA STATUS SOLIDI A-APPLICATIONS AND MATERIALS SCIENCE **DOI:** 10.1002/pssa.202400523 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 22

Abstract: Samples with compositions of Sr2Sn1-xMnxO4(SSM) with 0 <= x <= 0.10 are prepared by conventional ceramic route via heat treatment at 1350 degrees C. Phase and crystal structure analysis is studied using X-ray diffraction and Rietveld refinement to confirm the crystallization of samples in the tetragonal structure under space group I4/mmm. The size-strain plot method is employed to identify the role of Mn on crystallite size/microstrain/dislocation density. The scanning electron microscope and energy-dispersive X-ray spectroscopy analysis confirm a significant change in the grain size and compositional homogeneity of all samples with Mn-doping. Dielectric properties of samples are explained in terms of interfacial and orientation polarization of dipoles Sn-Sn4+(2+)"-V-O & sdot;& sdot;;2Mn(2Mn3+)(2+)'-VO & sdot;& sdot;Modulus studies show the exclusion of electrode contribution from the electrical properties. The single-segment circular dielectric resonator antenna is designed with the help of experimental dielectric parameters and showed two major resonant frequencies at 3.6 and 6.7 GHz. The reduction in the S11 parameter and -10 dB reflection coefficient bandwidth with Mn-doping observed due to overlapping of the E-field line suggests the application in patch array antenna for radar and satellite communication applications. This study also enables to explore Sr2SnO4-based Ruddlesden Popper oxide for antenna and mm-wave communication applications.

Accession Number: WOS:001318491900001
Language: English
Document Type: Article; Early Access

Author Keywords: arrhenius transport; dielectric resonator antenna; nyquist plot; rietveld refinement; ruddlesden popper oxide

KeyWords Plus: MICROWAVE; CERAMICS

Addresses: [Kumar, Upendra; Yadav, Vedika; Kumar, Raj] IIIT Allahabad, Dept Appl Sci, Adv Funct Mat Lab, Prayagraj 211015, Uttar Pradesh, India.
[Singh, Pinki] Jawaharlal Nehru Univ, Special Ctr Nanosci, New Delhi 110067, Delhi, India.

Corresponding Address: Kumar, U (corresponding author), IIIT Allahabad, Dept Appl Sci, Adv Funct Mat Lab, Prayagraj 211015, Uttar Pradesh, India.

E-mail Addresses: upendrakumar@iiita.ac.in

Affiliations: Indian Institute of Information Technology Allahabad; Jawaharlal Nehru University, New Delhi; Special Centre for Nanoscience, Jawaharlal Nehru University

Publisher: WILEY-V C H VERLAG GMBH

Publisher Address: POSTFACH 101161, 69451 WEINHEIM, GERMANY

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Materials Science, Multidisciplinary; Physics, Applied; Physics, Condensed Matter

Research Areas: Materials Science; Physics

IDS Number: G7O7K

ISSN: 1862-6300

eISSN: 1862-6319

29-char Source Abbrev.: PHYS STATUS SOLIDI A

ISO Source Abbrev.: Phys. Status Solidi A-Appl. Mat.

Source Item Page Count: 17

Funding:

Funding Agency	Grant Number
Science and Engineering Research Board (SERB)	
	SERB/EEQ/2021/000132

The author, Upendra Kumar, acknowledges the Science and Engineering Research Board (SERB) for the research grant (File No.: SERB/EEQ/2021/000132) and IIIT Allahabad for providing a Seed-Money research project.

Output Date: 2024-10-01

Record 13 of 29

Title: Blockchain and Quantum Machine Learning Driven Energy Trading for Electric Vehicles

Author(s): Kashyap, PK (Kashyap, Pankaj Kumar); Dohare, U (Dohare, Upasana); Kumar, M (Kumar, Manoj); Kumar, S (Kumar, Sushil)

Source: AD HOC NETWORKS **Volume:** 165 **Article Number:** 103632 **DOI:** 10.1016/j.adhoc.2024.103632 **Early Access Date:** SEP 2024 **Published Date:** 2024 DEC 1

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 2

Usage Count (Since 2013): 2

Cited Reference Count: 53

Abstract: With the steep growth of Electric Vehicles (EV's), the consequent demand of energy for charging puts significant load to powergrids. Renewable Energy Sources enabled microgrids can alleviate the problem of energy demand and trade the energy locally in Peer-to-Peer (P2P) manner, where seller (microgrid) and buyer

(EV's) "meet" to trade electricity directly on agreed term without any intermediary. However, a foolproof system required for audit and verification of transaction record between seller and buyer to address privacy and security in untrusted and opaque local energy trading market (LETM). Centralized public blockchain enabled system (for audit the transaction records and storage) based on conventional learning models faces mainly two issues in the LETM. (a) if, centralize system runs out of energy and tear down then whole energy trading plunges treated as single point of failure (b) Conventional learning models fail to converge optimal point in case of large state and action space (large number of EV's and their energy demand). The primary objective of this paper to provide secure system for LETM, 1) Distributed nature of Consortium Blockchain used that solve the problem of single point of failure to audit and storage of transaction and profile info of microgrids and EV's. 2) Quantum based Reinforcement Learning (QRL) easily handles the large number of EV's energy supply and demand for smoothly run LETM. In this context, this paper presents Blockchain and Quantum Machine Learning driven energy trading model for EVs (B-MET). A utility maximization problem formulated as Markov Decision Process (MDP) and their solution provided by using QRL focusing on join optimization of selling price, loan amount and quantity of shared energy. MDP is a mathematical framework used to model decision-making in situations where outcomes are partly random and partly under the control of a decision-maker, i.e., the future state depends only on the current state and action, not on the sequence of events that preceded it. QRL method combines quantum theory with traditional RL. It is inspire by the principles of state superposition and quantum parallelism. Convergence analysis and performance results attest that B-MET convergences faster, maximizes the utility with lower confirmation delay in P2P energy trading as compare to state of the art techniques.

Accession Number: WOS:001306919500001

Language: English

Document Type: Article

Author Keywords: Blockchain; Electric Vehicles; Quantum Reinforcement Learning; Energy Trading; Smart Contract

KeyWords Plus: REINFORCEMENT; COORDINATION; MANAGEMENT

Addresses: [Kashyap, Pankaj Kumar; Kumar, Sushil] Jawaharlal Nehru Univ, Sch Comp & Syst Sci, New Delhi, India.
[Dohare, Upasana] Galgotias Univ, Sch Comp Sci & Engn, Greater Noida, India.
[Kumar, Manoj] Univ Delhi, Dept Comp Sci, Indraprastha Coll Women, Delhi, India.

Corresponding Address: Kumar, S (corresponding author), Jawaharlal Nehru Univ, Sch Comp & Syst Sci, New Delhi, India.

E-mail Addresses: pankaj.kashyap@nic.in; upasana.dohare@galgotiasuniversity.edu.in; manojkumar@ip.du.ac.in; manojkumar@ip.du.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi; Galgotias University; University of Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Kashyap, Pankaj	JPX-7751-2023	

Publisher: ELSEVIER

Publisher Address: RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Computer Science, Information Systems; Telecommunications

Research Areas: Computer Science; Telecommunications

IDS Number: F0P2M

ISSN: 1570-8705

eISSN: 1570-8713

29-char Source Abbrev.: AD HOC NETW

ISO Source Abbrev.: Ad Hoc Netw.

Source Item Page Count: 18

Output Date: 2024-10-01

Record 14 of 29

Title: Full body sensillar diversity of pumpkin fruit fly, Bactrocera tau (Walker) (Diptera: Tephritidae)

Author(s): Rana, A (Rana, Alka); Sharma, D (Sharma, Dixit); Thakur, H (Thakur, Himanshu); Thakur, P (Thakur, Pankaj); Kumar, S (Kumar, Sunil)

Source: ZOOMORPHOLOGY **DOI:** 10.1007/s00435-024-00680-5 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 11

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 66

Abstract: The pumpkin fruit fly, Bactrocera tau (Walker) (Diptera: Tephritidae) is one of the most serious insect pests of fruits, vegetables and nuts over the world due to its polyphagous nature and high reproductive rate. To gain insight into their sensory system, the external morphology, typology, density, and distribution of sensilla on full bodies of both adult male and female B. tau were observed using a scanning electron microscope. The observed sensilla showed organ as well as sex specific differences. Seven previously described sensilla (two non-olfactory, five olfactory with 17 subtypes) and a new sensillum named as "branched sensilla" (two subtypes) were identified and observed on the different body parts. Olfactory sensilla named as sensilla trichodea and sensilla basiconica were reported on the compound eyes for the first time. Majority of the olfactory sensilla were reported on the head appendages. The presence of species-specific as well as sex-specific branched sensilla in females showed different typology patterns of sensilla. The potential roles of observed sensilla were hypothesized through comparative analysis with prior research. The current findings can provide a reference for understanding the diversity of various olfactory and non-olfactory sensilla in B. tau as well as sex-specific morphological differences and functions of various body parts; thereby, aiding in the development of precise methods for regulating and managing insect behaviour.

Accession Number: WOS:001309916200001

Language: English

Document Type: Article; Early Access

Author Keywords: Sensilla; Olfaction; Bactrocera tau; Morphology; SEM

KeyWords Plus: ANTENNAL SENSILLA; MAXILLARY PALP; FINE-STRUCTURE; COLEOPTERA; MORPHOLOGY

Addresses: [Rana, Alka; Sharma, Dixit; Kumar, Sunil] Cent Univ Himachal Pradesh, Dept Anim Sci, Shahpur 176206, Himachal Prades, India.
[Thakur, Himanshu] CSK Himachal Pradesh Agr Univ, Dept Entomol, Palampur 176061, Himachal Prades, India.
[Thakur, Pankaj] Jawaharlal Nehru Univ, Dept Nanosci, New Delhi 110067, India.

Corresponding Address: Kumar, S (corresponding author), Cent Univ Himachal Pradesh, Dept Anim Sci, Shahpur 176206, Himachal Prades, India.

E-mail Addresses: sunilibes@gmail.com

Affiliations: Central University of Himachal Pradesh; Ch. Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya; Jawaharlal Nehru University, New Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Kumar, Sunil	IQU-2770-2023	

Publisher: SPRINGER

Publisher Address: ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)
Web of Science Categories: Anatomy & Morphology; Zoology
Research Areas: Anatomy & Morphology; Zoology
IDS Number: F4Z5I
ISSN: 0720-213X
eISSN: 1432-234X
29-char Source Abbrev.: ZOOMORPHOLOGY
ISO Source Abbrev.: Zoomorphology
Source Item Page Count: 18
Funding:

Funding Agency	Grant Number
Council of Scientific & Industrial Research, New Delhi	

Alka acknowledge Council of Scientific & Industrial Research, New Delhi, for providing Junior Research Fellowship. The authors acknowledge Department of Animal Sciences, Central University of Himachal Pradesh and Department of Nanoscience, JNU, New Delhi for providing research facilities.
Output Date: 2024-10-01

Record 15 of 29

Title: THF induces apoptosis by downregulating initiation, promotion, and progression phase biomarkers in skin and lung carcinoma

Author(s): Raza, W (Raza, Waseem); Meena, A (Meena, Abha); Luqman, S (Luqman, Suaib)

Source: JOURNAL OF BIOCHEMICAL AND MOLECULAR TOXICOLOGY **Volume:** 38 **Issue:** 9 **Article Number:** e23838 **DOI:** 10.1002/jbt.23838 **Published Date:** 2024 SEP

Abstract: 3,5,7-Trihydroxy-2-phenylchromen-4-one (THF) possesses a diverse range of pharmacological activities. Evidence suggests that THF exerts anticancer activity by distinct mechanisms of action. This study explores the anticancer potential of THF in human lung (A549) and skin (A431) cancer cells by employing different antiproliferative assays. 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide, neutral red uptake, sulphorhodamine B, and cell motility assays were used to confirm the anticancer potential of THF. Cell target-based and quantitative reverse transcription polymerase chain reaction (qRT-PCR) assays were used to explore the effect of THF on the initiation, promotion and progression phase biomarkers of carcinogenesis. THF suppresses the activity of lipoxygenase-5 up to similar to 40% in both A549 and A431 cells and up to similar to 50% hyaluronidase activity in A549 cells. qRT-PCR assay reveals that THF inhibits the activity of phosphatidyl inositol-3 kinase/protein kinase B/mammalian target of rapamycin in both cell lines, which is responsible for the initiation of cancer. It also arrests the G2/M phase of the cell cycle in A431 cells and increases the sub-diploid population in both A549 and A431 cell lines which leads to cell death. Annexin V-FITC assay confirmed that THF induces apoptosis and necrosis in A431 and A549 cell lines. Further investigation revealed that THF not only enhances reactive oxygen species production but also modulates mitochondrial membrane potential in both cell lines. It significantly inhibits S-180 tumour formation at 5 and 10 mg/kg bw, i.p. dose. An acute skin toxicity study on mice showed that erythema and edema scores are within the acceptable range, besides acceptable drug-likeness properties and non-toxic effects on human erythrocytes. Conclusively, THF showed potent anticancer activity on skin and lung carcinoma cell lines, suppressed the level of the biomarkers and inhibited tumour growth in mice.

Accession Number: WOS:001308113000001

PubMed ID: 39243196

Language: English

Document Type: Article

Author Keywords: apoptosis; cell-cycle; Hyaluronidase; necrosis; S-180; THF

KeyWords Plus: HEPATOCELLULAR-CARCINOMA; GALANGIN SUPPRESSES; CANCER-CELLS; INHIBITION; PROLIFERATION; ANTICANCER; PATHWAY; GROWTH; ASSAY; TUMOR

Addresses: [Raza, Waseem; Meena, Abha; Luqman, Suaib] CSIR Cent Inst Med & Aromat Plants, Bioprospect & Prod Dev Div, Lucknow 226015, Uttar Pradesh, India.
[Raza, Waseem] Jawaharlal Nehru Univ, New Delhi, India.
[Meena, Abha; Luqman, Suaib] Acad Sci & Innovat Res AcSIR, Ghaziabad, India.

Corresponding Address: Meena, A (corresponding author), CSIR Cent Inst Med & Aromat Plants, Bioprospect & Prod Dev Div, Lucknow 226015, Uttar Pradesh, India.

E-mail Addresses: a.meena@cimap.res.in

Affiliations: Council of Scientific & Industrial Research (CSIR) - India; CSIR - Central Institute of Medicinal & Aromatic Plants (CIMAP); Jawaharlal Nehru University, New Delhi; Academy of Scientific & Innovative Research (AcSIR)

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Luqman, Suaib	M-5541-2015	
Meena, Abha	AAE-2270-2022	
MEENA, ABHA		0000-0002-1014-1486
Luqman, Suaib		0000-0001-6568-8107

Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Biochemistry & Molecular Biology; Toxicology

Research Areas: Biochemistry & Molecular Biology; Toxicology

IDS Number: F2I7M

ISSN: 1095-6670

eISSN: 1099-0461

29-char Source Abbrev.: J BIOCHEM MOL TOXIC

ISO Source Abbrev.: J. Biochem. Mol. Toxicol.

Source Item Page Count: 15

Funding:

Funding Agency	Grant Number
Central Institute of Medicinal and Aromatic Plants	DU2/MLP-11
Council of Scientific & Industrial Research (CSIR), New Delhi	EEQ/2021/000292
SERB, New Delhi, India	

We appreciate the Director, CSIR-Central Institute of Medicinal and Aromatic Plants, Lucknow, for providing us with research-related facilities. Waseem Raza is thankful to the Council of Scientific & Industrial Research (CSIR), New Delhi, for the Senior Research Fellowship. This study was funded by CSIR-CIMAP (DU2/MLP-11) and SERB, New Delhi, India grant number EEQ/2021/000292.

Output Date: 2024-10-01

Title: Activation of Induced Systemic Resistance in Cotton Plants Against Fusarium and Macrophomina by Microbial Antagonists

Author(s): Poria, V (Poria, Vikram); Jhilta, P (Jhilta, Prakriti); Kumar, S (Kumar, Sandeep); Rana, A (Rana, Anuj); Pranaw, K (Pranaw, Kumar); Singh, S (Singh, Surender)

Source: JOURNAL OF PLANT GROWTH REGULATION **DOI:** 10.1007/s00344-024-11495-5 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 22

Abstract: The use of microbial antagonists (MAs) against phytopathogens is a cost-effective, environmentally sustainable strategy that successfully enhances crop yield. In this study, we evaluated the in-planta efficacy of multistress-tolerant MAs isolated previously from the cotton rhizosphere showing high antagonistic activity against Macrophomina phaseolina and Fusarium oxysporum. During pathogenicity testing, M. phaseolina was found more aggressive compared to F. oxysporum as indicated by disease area percentage on cotton seeds but the use of MAs lowered the seed mortality rate (0-20%) in the pot experiment compared to pathogen control (47-60%) indicating their high antagonistic potential. The mode of antagonism was investigated by identifying antifungal metabolites and volatile organic compounds secreted by these agents using HPLC-MS and GC-MS coupled with SPME fiber, respectively, which revealed compounds like iturins, surfactins, mixirins, fengycins, undecanone, involved in the activation of induced systemic resistance (ISR) along with the antifungal activity. The increased levels of two defense enzymes, polyphenol oxidase [110-180% increase over absolute control (IOC)] and phenylalanine ammonia-lyase (22-58% IOC), and three antioxidant enzymes, catalase (36-98% IOC), peroxidase (44-71% IOC), and superoxide dismutase (72-145% IOC) in MA-treated plants confirmed the activation of ISR against both pathogens. The proline, total phenolic, and glycine betaine contents also increased in the MAs-treated plants, whereas a decreased malondialdehyde content was observed. These results indicate that these MAs are reliable and sustainable options for enhancing crop growth and that their bioformulations can be used to control fungal pathogens and help plants endure biotic and abiotic stresses.

Accession Number: WOS:001318539500001

Language: English

Document Type: Article; Early Access

Author Keywords: Biocontrol; Induced systemic resistance; Iturins; Phytopathogens; Root rot; Surfactins

KeyWords Plus: ANTIFUNGAL ACTIVITY; IN-VITRO; BACILLUS-AMYLOLIQUEFACIENS; CYCLIC LIPOPEPTIDES; ANALOGS; STREPTOMYCES; IDENTIFICATION; INHIBITION; BIOCONTROL; PEPTIDES

Addresses: [Poria, Vikram; Jhilta, Prakriti; Kumar, Sandeep; Singh, Surender] Cent Univ Haryana, Dept Microbiol, Mahendergarh 123031, Haryana, India.
[Kumar, Sandeep] Bihar Agr Univ, Dept Soil Sci & Agr Chem, Sabour 813210, Bihar, India.
[Rana, Anuj] CCS Haryana Agr Univ, Dept Microbiol COBS & H, Hisar 125004, India.
[Pranaw, Kumar] Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi 110067, India.

Corresponding Address: Singh, S (corresponding author), Cent Univ Haryana, Dept Microbiol, Mahendergarh 123031, Haryana, India.

E-mail Addresses: surendersingh@cuh.ac.in

Affiliations: Central University of Haryana; CCS Haryana Agricultural University; Jawaharlal Nehru University, New Delhi

Publisher: SPRINGER

Publisher Address: ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Plant Sciences

Research Areas: Plant Sciences
IDS Number: G7Q5R
ISSN: 0721-7595
eISSN: 1435-8107
29-char Source Abbrev.: J PLANT GROWTH REGUL
ISO Source Abbrev.: J. Plant Growth Regul.
Source Item Page Count: 21
Funding:

Funding Agency	Grant Number
DBT-JRF fellowship	DBTHRDPMU/JRF/BET-22/I/2022-23/45
Department of Biotechnology, Government of India	

VP acknowledges the DBT-JRF fellowship (award letter no. DBTHRDPMU/JRF/BET-22/I/2022-23/45) provided by the Department of Biotechnology, Government of India. The agency had no role in the study design or collection, analysis, or interpretation of the data.
Output Date: 2024-10-01

Record 17 of 29

Title: Phytochemicals and Nanotechnology: A Powerful Combination against Breast Cancer

Author(s): Shafi, S (Shafi, Sadat); Ahmed, F (Ahmed, Faraha); Waheed, A (Waheed, Ayesha); Ahmad, SS (Ahmad, Syed Sufiyan); Khan, S (Khan, Sana); Khan, MA (Khan, Mohammad Ahmed); Pottoo, FH (Pottoo, Faheem Hyder); Rabbani, SA (Rabbani, Syed Arman); Singh, S (Singh, Shailja); Najmi, A (Najmi, Abul Kalam)

Source: MINI-REVIEWS IN MEDICINAL CHEMISTRY **DOI:** 10.2174/0113895575297312240903055926 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 13
Times Cited in Web of Science Core Collection: 0
Total Times Cited: 0
Usage Count (Last 180 days): 0
Usage Count (Since 2013): 0
Cited Reference Count: 175

Abstract: Considerable advancements have been made in breast cancer therapeutics in the past few decades. However, the advent of chemo-resistance and adverse drug reactions coupled with tumor metastasis and recurrence posed a serious threat to combat this lethal disease. Novel anti-cancer agents, as well as new therapeutic strategies, are needed to complement conventional breast cancer therapies. The quest for developing novel anti-cancer drugs caused an upsurge in exploring and harnessing natural compounds, especially phytochemicals. Various research groups have explored and documented the anti-cancer potential of wide variety of phytochemical groups including flavonoids (curcumin, kaempferol, myricetin, quercetin, naringenin, apigenin, genistein epigallocatechin gallate), stilbenes (resveratrol), carotenoids (crocin, lycopene, lutein), and anthraquinone (Emodin). However, low chemical stability, poor water solubility, and short systemic half-life impede their clinical utility. The implication of nano-technological approaches to decode the pharmacokinetic challenges associated with phytochemical usage, as well as selective drug targeting, have markedly enhanced the pre-clinical anti-cancer activity, thus aiding in their clinical translation. This review documented the recent advances in utilizing phytochemicals for breast cancer prevention and lipid-based nanotechnological approaches for circumventing their pharmacokinetic concerns to enhance their systemic availability, cytotoxicity, and targeted delivery against breast cancer alone as well as in combination with conventional therapeutic agents.

Accession Number: WOS:001315933900001
PubMed ID: 39279694
Language: English

Document Type: Review; Early Access

Author Keywords: Breast cancer; phytochemicals; flavonoids; lipid nano-carriers; liposomes; lipid nanocapsules

KeyWords Plus: SOLID LIPID NANOPARTICLES; FATTY-ACID SYNTHASE; DRUG-DELIVERY; FORMULATION OPTIMIZATION; ALPHA EXPRESSION; DOWN-REGULATION; CELL-GROWTH; STEM-CELLS; 3 SUBTYPES; CURCUMIN

Addresses: [Shafi, Sadat; Ahmed, Faraha; Waheed, Ayesha; Ahmad, Syed Sufiyan; Khan, Sana; Khan, Mohammad Ahmed; Najmi, Abul Kalam] Jamia Hamdard, Sch Pharmaceut Educ & Res, Dept Pharmacol, New Delhi 110062, India.
[Pottoo, Faheem Hyder] Imam Abdulrahman Bin Faisal Univ, Coll Clin Pharm, Dept Pharmacol, Dammam 31441, Saudi Arabia.
[Rabbani, Syed Arman] Ras Al Khaimah Med & Hlth Sci Univ, Ras Al Khaimah Coll Pharm, Dept Clin Pharm & Pharmacol, Ras Al Khaymah, U Arab Emirates.
[Shafi, Sadat; Singh, Shailja; Najmi, Abul Kalam] Jawaharlal Nehru Univ, Special Ctr Mol Med, New Delhi, India.

Corresponding Address: Singh, S; Najmi, A (corresponding author), Jawaharlal Nehru Univ, Special Ctr Mol Med, New Delhi, India.

E-mail Addresses: shailja.jnu@gmail.com

Affiliations: Jamia Hamdard University; Imam Abdulrahman Bin Faisal University; Jawaharlal Nehru University, New Delhi

Publisher: BENTHAM SCIENCE PUBL LTD

Publisher Address: EXECUTIVE STE Y-2, PO BOX 7917, SAIF ZONE, 1200 BR SHARJAH, U ARAB EMIRATES

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Chemistry, Medicinal

Research Areas: Pharmacology & Pharmacy

IDS Number: G3U7L

ISSN: 1389-5575

eISSN: 1875-5607

29-char Source Abbrev.: MINI-REV MED CHEM

ISO Source Abbrev.: Mini-Rev. Med. Chem.

Source Item Page Count: 17

Funding:

Funding Agency	Grant Number
DST-FIST award from the Department of Science and Technology, Government of India	
AYUSH	
Senior Research Fellowship from ICMR	Fellowship/45/48/2019-PHA/BMS

AK Najmi gratefully acknowledges the financial support in the form of the DST-FIST award from the Department of Science and Technology, Government of India, and AYUSH. SS acknowledges a Senior Research Fellowship from ICMR (Fellowship/45/48/2019-PHA/BMS).

Output Date: 2024-10-01

Record 18 of 29

Title: Structural insights into polyethylene terephthalate (PET)-degrading archaeal lipase enzyme: An insilico approach

Author(s): Puri, P (Puri, Prathana); Pandey, K (Pandey, Kamini); Khuman, AB (Khuman, Aniruddha Bhai); Kumar, S (Kumar, Shubham); Mehtab, S (Mehtab, Sameena); Chaudhary, B (Chaudhary, Bhupendra); Singhal, B (Singhal, Barkha)

Source: BIOREMEDIATION JOURNAL **DOI:** 10.1080/10889868.2024.2404880 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 14

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 62

Abstract: Biodegradation of plastic is the most eco-friendly degradation process conferred by various microbial enzymes, especially the lipase enzymes. The lipase enzymes depict a broad substrate range, high regio/stereoselectivity, and stability in organic solvents. However, enhancing the catalytic activity of lipases for industrial production remains a challenge, predominantly due to the need for their extensive mechanistic characterization. Here, we employed a multidisciplinary approach to illustrate the comprehensive physiochemical and mechanical properties of 102 lipase sequences from six different groups of plastic-degrading microorganisms. Molecular docking-based evaluation of the binding efficiencies of selected lipases with the most common plastic polymers- polyurethane (PUR) and polyethylene terephthalate (PET), revealed that the archaeal lipase had the lowest binding energy of -7.1 kcal/mol with PET. Remarkably, the molecular dynamic simulation studies (up to 100 ns) and very low RMSD (0.3 nm) and RMSF (0.25 nm) values further ascertained the stability of archaeal lipase after binding with PET polymer. Further, a 2.19 nm radius of gyration (Rg) within 100 ns simulation time, binding free energy Delta G(TOTAL) with -24.36 kcal/mol and entropy factor -T Delta S 7.65 kcal/mol also indicated strong binding of archaeal lipase with PET polymer. The mechanistic exploration of archaeal lipase yielded valuable insights into its effective binding with PET polymer, paving the way for future lipase enzyme engineering and harnessing its industrial potential for plastic biodegradation.

Accession Number: WOS:001317545300001

Language: English

Document Type: Article; Early Access

Author Keywords: Biodegradation; environmental sustainability; lipase; molecular docking; PET; plastic

KeyWords Plus: MOLECULAR-DYNAMICS SIMULATIONS; MICROBIAL LIPASES; PROTEIN; FEATURES; WEB

Addresses: [Puri, Prathana; Pandey, Kamini; Kumar, Shubham; Singhal, Barkha] Gautam Buddha Univ, Sch Biotechnol, Greater Noida, Uttar Pradesh, India.
[Khuman, Aniruddha Bhai] Parul Univ, Parul Inst Technol, Dept Biotechnol, Vadodara, Gujarat, India.
[Mehtab, Sameena] GB Pant Univ Agr & Technol, Dept Chem, Pantnagar, Uttarakhand, India.
[Chaudhary, Bhupendra] Jawaharlal Nehru Univ, Sch Life Sci, New Delhi, India.

Corresponding Address: Singhal, B (corresponding author), Gautam Buddha Univ, Sch Biotechnol, Greater Noida, Uttar Pradesh, India.

E-mail Addresses: barkha@gbu.ac.in

Affiliations: Gautam Buddha University; Parul University; Govind Ballabh Pant University of Agriculture Technology; Jawaharlal Nehru University, New Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Singhal, Barkha		0000-0003-0538-662X

Publisher: TAYLOR & FRANCIS INC

Publisher Address: 530 WALNUT STREET, STE 850, PHILADELPHIA, PA 19106 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Engineering, Environmental; Environmental Sciences

Research Areas: Engineering; Environmental Sciences & Ecology
IDS Number: G6E4G
ISSN: 1088-9868
eISSN: 1547-6529
29-char Source Abbrev.: BIOREMEDIAT J
ISO Source Abbrev.: Bioremediat. J.
Source Item Page Count: 21
Funding:

Funding Agency	Grant Number
Gautam Buddha University	
Jawaharlal Nehru University	
G.B.Pant University of Agriculture & Technology and Parul University	

The authors are incredibly thankful to the support of Gautam Buddha University, Jawaharlal Nehru University, and G.B.Pant University of Agriculture & Technology and Parul University for writing the present investigation.
Output Date: 2024-10-01

Record 19 of 29

Title: Gut microbiota derived short-chain fatty acids in physiology and pathology: An update

Author(s): Archana (Archana, Abhijeet Kumar); Gupta, AK (Gupta, Abhijeet Kumar); Noumani, A (Noumani, Ashab); Panday, DK (Panday, Dharmendra Kumar); Zaidi, F (Zaidi, Fareen); Sahu, GK (Sahu, Gaurav Kumar); Joshi, G (Joshi, Gunjan); Yadav, M (Yadav, Manisha); Borah, SJ (Borah, Shikha Jyoti); Susmitha, V (Susmitha, Vanne); Mohan, A (Mohan, Anand); Kumar, A (Kumar, Anil); Solanki, PR (Solanki, Pratima R.)

Source: CELL BIOCHEMISTRY AND FUNCTION **Volume:** 42 **Issue:** 7 **Article Number:** e4108 **DOI:** 10.1002/cbf.4108 **Published Date:** 2024 SEP

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 3

Usage Count (Since 2013): 3

Cited Reference Count: 205

Abstract: Short-chain fatty acids (SCFAs) are essential molecules produced by gut bacteria that fuel intestinal cells and may also influence overall health. An imbalance of SCFAs can result in various acute and chronic diseases, including diabetes, obesity and colorectal cancer (CRC). This review delves into the multifaceted roles of SCFAs, including a brief discussion on their source and various gut-residing bacteria. Primary techniques used for detection of SCFAs, including gas chromatography, high-performance gas chromatography, nuclear magnetic resonance and capillary electrophoresis are also discussed through this article. This review study also compiles various synthesis pathways of SCFAs from diverse substrates such as sugar, acetone, ethanol and amino acids. The different pathways through which SCFAs enter cells for immune response regulation are also highlighted. A major emphasis is the discussion on diseases associated with SCFA dysregulation, such as anaemia, brain development, CRC, depression, obesity and diabetes. This includes exploring the relationship between SCFA levels across ethnicities and their connection with blood pressure and CRC. In conclusion, this review highlights the critical role of SCFAs in maintaining gut health and their implications in various diseases, emphasizing the need for further research on SCFA detection, synthesis and their potential as diagnostic biomarkers. Future studies of SCFAs will pave the way for the development of novel diagnostic tools and therapeutic strategies for optimizing gut health and preventing diseases associated with SCFA dysregulation. Understanding the role of short-chain fatty acids (SCFAs) is crucial because they are fundamental to maintaining colonic health and overall bodily function. Imbalances in SCFAs are linked to serious conditions like diabetes, obesity and colorectal cancer, making it essential to explore their regulation and impact.

Additionally, studying the variations in SCFA levels across different ethnicities can provide insights into disease susceptibility and health disparities. Furthermore, advancing detection methods and developing sensors for SCFAs could revolutionize diagnostics, allowing for earlier and more precise intervention in metabolic and gut-related diseases. Thus, this review addresses significant gaps in knowledge and technology that could lead to better health outcomes.

Accession Number: WOS:001303634600001

PubMed ID: 39228159

Language: English

Document Type: Review

Author Keywords: diseases; gut microbiota; metabolites; sensors; short-chain fatty acids

KeyWords Plus: GAS CHROMATOGRAPHY/MASS SPECTROMETRY; PERFORMANCE LIQUID-CHROMATOGRAPHY; BUTYRATE-PRODUCING BACTERIA; WOOD-LJUNGDAHL PATHWAY; HUMAN FECES; REACTOR MICROBIOMES; AMINO-ACIDS; CAPILLARY-ELECTROPHORESIS; CLOSTRIDIUM-KLUYVERI; MEGASPHAERA-ELSDENII

Addresses: [Archana, Abhijeet Kumar; Gupta, Abhijeet Kumar; Noumani, Ashab; Panday, Dharmendra Kumar; Zaidi, Fareen; Sahu, Gaurav Kumar; Joshi, Gunjan; Yadav, Manisha; Borah, Shikha Jyoti; Susmitha, Vanne; Solanki, Pratima R.] Jawaharlal Nehru Univ, Special Ctr Nanosci, Nanobio Lab, New Delhi, India.
[Mohan, Anand] Lovely Profess Univ, Sch Bioengn & Biosci, Phagwara, India.
[Kumar, Anil] Natl Inst Immunol, New Delhi, India.

Corresponding Address: Solanki, PR (corresponding author), Jawaharlal Nehru Univ, Special Ctr Nanosci, Nanobio Lab, New Delhi, India.
Kumar, A (corresponding author), Natl Inst Immunol, New Delhi, India.

E-mail Addresses: anilk@nii.ac.in; partima@mail.jnu.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi; Special Centre for Nanoscience, Jawaharlal Nehru University; Lovely Professional University; Department of Biotechnology (DBT) India; National Institute of Immunology (NII)

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Kumar Gupta, Abhijeet		0000-0002-2473-0652
, Archana		0000-0001-8451-572X

Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Biochemistry & Molecular Biology; Cell Biology

Research Areas: Biochemistry & Molecular Biology; Cell Biology

IDS Number: E5T8O

ISSN: 0263-6484

eISSN: 1099-0844

29-char Source Abbrev.: CELL BIOCHEM FUNCT

ISO Source Abbrev.: Cell Biochem. Funct.

Source Item Page Count: 17

Funding:

Funding Agency	Grant Number
Indian Council of Medical Research	.11013/46/2021-GIA/HR
Department Health Research, Ministry of Health and Family Welfare, Government of India	DBTHRDPMU/JRF/BET-21/I/2021-22/364

Indian Council of Medical Research, Grant/Award Number: R.11013/46/2021-GIA/HR; Department of Biotechnology,Ministry of Science and Technology, India,Grant/Award Number: DBTHRDPMU/JRF/BET-21/I/2021-22/364

Output Date: 2024-10-01

Record 20 of 29

Title: Re-inventing traditional aluminum-based adjuvants: Insight into a century of advancements

Author(s): Gogoi, H (Gogoi, Himanshu); Mani, R (Mani, Rajesh); Bhatnagar, R (Bhatnagar, Rakesh)

Source: INTERNATIONAL REVIEWS OF IMMUNOLOGY **DOI:** 10.1080/08830185.2024.2404095 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 17

Abstract: Aluminum salt-based adjuvants like alum, alhydrogel and Adju-Phos are by far the most favored clinically approved vaccine adjuvants. They have demonstrated excellent safety profile and currently used in vaccines against diphtheria, tetanus, pertussis, hepatitis B, anthrax etc. These vaccinations cause minimal side effects like local inflammation at the injection site. Aluminum salt-based adjuvants primarily stimulate CD4+ T cells and B cell mediated Th2 immune response leading to generate a robust antibody response. In this review article, we have compiled the role of physio-chemical role of the two commonly used aluminum salt-based adjuvants alhydrogel and Adju-Phos, and the effect of surface properties, buffer composition, and adjuvant dosage on the immune response. After being studied for almost a century, researchers have come up with various mechanism by which these aluminum adjuvants activate the immune system. Firstly, we have covered the initial works of Glenny and his "repository effect" which paved the work for his successors to explore the involvement of cytokines, chemokines, recruitment of innate immune cells, enhanced antigen uptake by antigen presenting cells, and formation of NLRP3 inflammasome complex in mediating the immune response. It has been reported that aluminum adjuvants activate multiple immunological pathways which synergistically activates the immune system. We later discuss the recent developments in nanotechnology-based preparations of next generation aluminum based adjuvants which has enabled precise size control and morphology of the traditional aluminum adjuvants thereby manipulating the immune response as per our desire. Aluminum salt adjuvants like alum, aluminum hydroxide gel, and aluminum phosphate have been regularly used in vaccine formulations to potentiate the immune response. Despite being discovered nearly a century ago by Alexander Glenny, the cellular and molecular mechanism behind the working of these adjuvants is still elusive. In this article, we review the advances made in understanding the mechanism of action of these adjuvants. Firstly, we cover the "repository theory" put forward by Glenny, and gradually review the role of innate and adaptive immune cells, immune complexes, and different immunological pathways in aluminum adjuvant orchestrated immune response. We also take a dig into the role of physio-chemical parameters like surface properties, buffer composition and adjuvant dosage of aluminum adjuvants in eliciting an immune response. Finally, we discuss the advances made by nano-preparations of aluminum adjuvants and their diverse physio-chemical properties as well as hypothesize their probable mechanism of action.

Accession Number: WOS:001319350200001

PubMed ID: 39310923

Language: English

Document Type: Review; Early Access

Author Keywords: Adju-Phos; adjuvant; alhydrogel; antigen presenting cells; cytokines; depot effect; inflammasome complex; nanotechnology; vaccine

KeyWords Plus: HEPATITIS-B-VACCINE; RECOMBINANT PROTECTIVE ANTIGEN; HYDROXIDE NANOPARTICLES SHOW; DENDRITIC CELL-POPULATIONS; IMMUNE-RESPONSE; MACROPHAGIC

MYOFASCIITIS; PARTICLE-SIZE; INFLAMMATORY RESPONSE; ANTIBODY-PRODUCTION; PROTEIN ADSORPTION

Addresses: [Gogoi, Himanshu; Bhatnagar, Rakesh] Amity Univ Rajasthan, Amity Inst Microbial Technol, Jaipur 303002, Rajasthan, India.
[Gogoi, Himanshu; Mani, Rajesh; Bhatnagar, Rakesh] Jawaharlal Nehru Univ, Sch Biotechnol, Lab Mol Biol & Genet Engn, New Delhi, India.
[Gogoi, Himanshu] NCR Biotech Sci Cluster, Translat Hlth Sci & Technol Inst, 3rd Milestone,Gurgaon Expressway, Faridabad, Haryana, India.
[Mani, Rajesh] Univ Kentucky, Dept Microbiol Immunol & Mol Genet, Coll Med, Lexington, KY USA.

Corresponding Address: Gogoi, H (corresponding author), Amity Univ Rajasthan, Amity Inst Microbial Technol, Jaipur 303002, Rajasthan, India.

E-mail Addresses: himanshuhrc2010@gmail.com

Affiliations: Jawaharlal Nehru University, New Delhi; Department of Biotechnology (DBT) India; Translational Health Science & Technology Institute (THSTI); University of Kentucky

Publisher: TAYLOR & FRANCIS INC

Publisher Address: 530 WALNUT STREET, STE 850, PHILADELPHIA, PA 19106 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Immunology

Research Areas: Immunology

IDS Number: G8V6G

ISSN: 0883-0185

eISSN: 1563-5244

29-char Source Abbrev.: INT REV IMMUNOL

ISO Source Abbrev.: Int. Rev. Immunol.

Source Item Page Count: 24

Output Date: 2024-10-01

Record 21 of 29

Title: Overexpression of CBK1 or deletion of SSD1 confers fludioxonil resistance in yeast by suppressing Hog1 activation

Author(s): Kundu, D (Kundu, Debasree); Martoliya, Y (Martoliya, Yogita); Sharma, A (Sharma, Anupam); Sasan, SP (Sasan, Soorya Partap); Wasi, M (Wasi, Mohd); Prasad, R (Prasad, Rajendra); Mondal, AK (Mondal, Alok K.)

Source: GENE **Volume:** 933 **Article Number:** 148905 **DOI:** 10.1016/j.gene.2024.148905 **Early Access Date:** SEP 2024 **Published Date:** 2025 JAN 15

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 46

Abstract: Group III hybrid histidine kinases (HHK3) are known molecular targets of the widely used fungicidal agent fludioxonil which indirectly converts these kinases to a phosphatase form that causes constitutive activation of Hog1 MAPK. To better understand the fungicidal effect of fludioxonil we have screened S. cerevisiae haploid deletion collection for fludioxonil resistant mutant and identified Ssd1 as a critical factor for this. Deletion of SSD1 not only promoted resistance to fludioxonil but also abrogated Hog1 activation and other cellular damages caused by fludioxonil. Our results showed that fludioxonil perturbed the localization of Cbk1 kinase, an essential protein in yeast, at the bud neck triggering the accumulation of Ssd1 in P-bodies. As a result, localized synthesis of Ssd1 bound mRNA encoding cell wall proteins at the polarized

growth site was impaired which created a sustained cell wall stress causing constitutive activation of Hog1. Our data, for the first time, clearly indicated the role of Cbk1 upstream of Hog1 and provided a novel paradigm in the mechanism of action of fludioxonil.

Accession Number: WOS:001308959600001

PubMed ID: 39218413

Language: English

Document Type: Article

KeyWords Plus: HYBRID HISTIDINE KINASES; POLARIZED GROWTH; SACCHAROMYCES; FAMILY; VIRULENCE; GENE; MORPHOGENESIS; LOCALIZATION; SENSITIVITY; RESPONSES

Addresses: [Kundu, Debasree; Sharma, Anupam] Inst Microbial Technol, CSIR, Sect 39A, Chandigarh, India.
[Kundu, Debasree; Martoliya, Yogita; Sasan, Soorya Partap; Wasi, Mohd; Mondal, Alok K.] Jawaharlal Nehru Univ, Sch Life Sci, New Delhi 110067, India.
[Prasad, Rajendra] Amity Univ, Amity Inst Integrat Sci & Hlth, Gurgaon 122413, India.
[Sharma, Anupam] Brown Univ, Dept Mol Microbiol & Immunol, Providence, RI 02912 USA.

Corresponding Address: Mondal, AK (corresponding author), Jawaharlal Nehru Univ, Sch Life Sci, New Delhi 110067, India.

E-mail Addresses: alok.imt@gmail.com

Affiliations: Council of Scientific & Industrial Research (CSIR) - India; CSIR - Institute of Microbial Technology (IMTECH); Jawaharlal Nehru University, New Delhi; Brown University

Publisher: ELSEVIER

Publisher Address: RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Genetics & Heredity

Research Areas: Genetics & Heredity

IDS Number: F3O8P

ISSN: 0378-1119

eISSN: 1879-0038

29-char Source Abbrev.: GENE

ISO Source Abbrev.: Gene

Source Item Page Count: 12

Funding:

Funding Agency	Grant Number
Department of Science and Technology	CRG/CRG/2020/002107
Indian Council of Medical Research	2020-1040/CMB/ADHOC-BMS
CSIR-UGC Senior Research Fellowship	
ICMR RA fellowship	

Yeast strains FLY1593 and plasmids FLE1080, FLE1081, FLE1079, FLE1019 are kind gift from Francis Luca (Department of Biomedical Sciences, University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA 19104, USA) . Work is supported partly by grant nos CRG/CRG/2020/002107 from the Department of Science and Technology (IN) and 2020-1040/CMB/ADHOC-BMS from the Indian Council of Medical Research (IN) to AKM. YM and MW are recipients of the CSIR-UGC Senior Research Fellowship and ICMR RA fellowship respectively.

Output Date: 2024-10-01

Title: Ensuring Sustainable Agricultural Practices: Treated Wastewater Quality and Its Impact on Groundwater for Irrigation in Oman

Author(s): Al-Shali, M (Al-Shali, Mohammed); Al-Farsi, K (Al-Farsi, Kutaila); Al-Rashdi, Y (Al-Rashdi, Yarub); Abdullahi, I (Abdullahi, Ibrahim); Mahato, S (Mahato, Susanta); Al-Busaidi, A (Al-Busaidi, Ahmed); Meena, U (Meena, Usha); Meena, R (Meena, Ramovatar)

Source: WATER AIR AND SOIL POLLUTION **Volume:** 235 **Issue:** 9 **Article Number:** 556 **DOI:** 10.1007/s11270-024-07285-0 **Published Date:** 2024 SEP

Abstract: The utilization of treated wastewater (TWW) for agricultural irrigation can enhance soil properties and fertility for better crop growth. However, toxic chemicals in TWW, if exceeding permissible limits, pose environmental and health risks. This study aims to evaluate the quality of treated wastewater (TWW) and groundwater used for irrigation in alfalfa and date palm fields, focusing on specific ion toxicity, salinity, heavy metal concentrations, and other water quality parameters. Water samples were collected from four plantation sites in the Ibra and Alqabil provinces during the summer and winter seasons of 2020 and 2021. The samples were analyzed for electrical conductivity (EC), pH, total dissolved solids (TDS), carbonate, bicarbonate, and the presence of arsenic (As), cadmium (Cd), cobalt (Co), boron (B), lead (Pb), nickel (Ni), copper (Cu), iron (Fe), zinc (Zn), manganese (Mn), and chromium (Cr). The findings reveal that both TWW and groundwater in the sampled sites exhibited salinity levels detrimental to sensitive crops. Trace element concentrations generally adhered to permissible limits as defined by FAO and Oman standards, except for boron, which exceeded allowable limits by up to 40% in groundwater when compared to the control site. Notably, cobalt (Co), arsenic (As), and cadmium (Cd) were undetectable in all water samples. Additionally, groundwater samples taken in close proximity to sewage treatment plants (STPs) displayed a 37% increase in EC, TDS, and heavy metal concentrations. This suggests that groundwater, like TWW, may contain undesirable salts and heavy metals that could compromise water quality. This research underscores the importance of monitoring and assessing the quality of both treated wastewater and groundwater used for irrigation. While these water sources hold potential benefits for agriculture, they also carry the risk of negatively impacting soil and crop health due to salinity and the presence of certain contaminants. This study provides critical insights into the safe use of TWW and groundwater in agricultural practices, highlighting areas for improvement in water treatment and management strategies to ensure sustainable agricultural productivity.

Accession Number: WOS:001276250200003

Language: English

Document Type: Article

Author Keywords: Physicochemical assessment; Environmental sustainability; Human health risks; Heavy metal contamination; Water quality analysis

KeyWords Plus: POLLUTION

Addresses: [Al-Shali, Mohammed] Minist Agr Fisheries & Water Resources, Muscat, Oman.
[Al-Shali, Mohammed; Al-Busaidi, Ahmed] Sultan Qaboos Univ, Coll Agr & Marine Sci, Muscat, Oman.
[Al-Farsi, Kutaila; Al-Rashdi, Yarub] Minist Agr Fisheries & Water Resources, Cent Lab Food Safety Resources, Muscat, Oman.
[Abdullahi, Ibrahim] Univ Abuja, Fac Agr, Abuja, Nigeria.
[Mahato, Susanta] Jawaharlal Nehru Univ, Special Ctr Disaster Res, New Delhi, India.
[Meena, Usha; Meena, Ramovatar] Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi, India.

Corresponding Address: Mahato, S (corresponding author), Jawaharlal Nehru Univ, Special Ctr Disaster Res, New Delhi, India.

E-mail Addresses: mahatosusanta2011@gmail.com

Affiliations: Sultan Qaboos University; Jawaharlal Nehru University, New Delhi; Jawaharlal Nehru University, New Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Mahato, Susanta	S-4907-2017	0000-0002-6437-2642

Publisher: SPRINGER INT PUBL AG

Publisher Address: GEWERBESTRASSE 11, CHAM, CH-6330, SWITZERLAND

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Environmental Sciences; Meteorology & Atmospheric Sciences; Water Resources

Research Areas: Environmental Sciences & Ecology; Meteorology & Atmospheric Sciences; Water Resources

IDS Number: ZO5K6

ISSN: 0049-6979

eISSN: 1573-2932

29-char Source Abbrev.: WATER AIR SOIL POLL

ISO Source Abbrev.: Water Air Soil Pollut.

Source Item Page Count: 18

Output Date: 2024-10-01

Record 23 of 29

Title: Temporal Gene Expression Profiles From Pollination to Seed Maturity in Sorghum Provide Core Candidates for Engineering Seed Traits

Author(s): Jain, R (Jain, Rubi); Dhaka, N (Dhaka, Namrata); Krishnan, K (Krishnan, Kushagra); Yadav, G (Yadav, Garima); Priyam, P (Priyam, Prachi); Sharma, MK (Sharma, Manoj Kumar); Sharma, RA (Sharma, Rita A.)

Source: PLANT CELL AND ENVIRONMENT **DOI:** 10.1111/pce.15134 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 9

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 1

Usage Count (Since 2013): 1

Cited Reference Count: 238

Abstract: Sorghum (Sorghum bicolor (L.) Moench) is a highly nutritional multipurpose millet crop. However, the genetic and molecular regulatory mechanisms governing sorghum grain development and the associated agronomic traits remain unexplored. In this study, we performed a comprehensive transcriptomic analysis of pistils collected 1-2 days before pollination, and developing seeds collected -2, 10, 20 and 30 days after pollination of S. bicolor variety M35-1. Out of 31 337 genes expressed in these stages, 12 804 were differentially expressed in the consecutive stages of seed development. These exhibited 10 dominant expression patterns correlated with the distinct pathways and gene functions. Functional analysis, based on the pathway mapping, transcription factor enrichment and orthology, delineated the key patterns associated with pollination, fertilization, early seed development, grain filling and seed maturation. Furthermore, colocalization with previously reported quantitative trait loci (QTLs) for grain weight/size revealed 48 differentially expressed genes mapping to these QTL regions. Comprehensive literature mining integrated with QTL mapping and expression data shortlisted 25, 17 and 8 core candidates for engineering grain size, starch and protein content, respectively.

We report transcriptomic analysis of pistils before pollination and four temporal stages of seed development in sorghum. Based on expression patterns, orthology, pathway and QTL information, candidate genes have been shortlisted to engineer seed weight/size, starch content and protein digestibility.

Accession Number: WOS:001307803900001

PubMed ID: 39248611

Language: English

Document Type: Article; Early Access

Author Keywords: grain filling; seed development; seed size; seed storage proteins; sorghum; starch content; transcriptome

KeyWords Plus: ADP-GLUCOSE PYROPHOSPHORYLASE; ENDOSPERM-SPECIFIC GENE; IMPROVES GRAIN-SIZE; RICE DWARF MUTANT; TRANSCRIPTION FACTOR; PLANT ARCHITECTURE; TARGETED MUTAGENESIS; CELL-PROLIFERATION; NATURAL VARIATION; ORGAN SIZE

Addresses: [Jain, Rubi; Krishnan, Kushagra] Jawaharlal Nehru Univ, Sch Computat & Integrat Sci, New Delhi, India.
[Dhaka, Namrata; Yadav, Garima; Priyam, Prachi] Cent Univ Haryana, Sch Interdisciplinary & Appl Sci, Dept Biotechnol, Mahendergarh, Haryana, India.
[Sharma, Manoj Kumar] Jawaharlal Nehru Univ, Sch Biotechnol, New Delhi, India.
[Sharma, Rita A.] Birla Inst Technol & Sci BITS Pilani, Dept Biol Sci, Pilani, Rajasthan, India.
[Sharma, Rita A.] Natl Agrifood Biotechnol Inst NABI, Mohali, Punjab, India.

Corresponding Address: Dhaka, N (corresponding author), Cent Univ Haryana, Sch Interdisciplinary & Appl Sci, Dept Biotechnol, Mahendergarh, Haryana, India.
Sharma, RA (corresponding author), Birla Inst Technol & Sci BITS Pilani, Dept Biol Sci, Pilani, Rajasthan, India.
Sharma, RA (corresponding author), Natl Agrifood Biotechnol Inst NABI, Mohali, Punjab, India.

E-mail Addresses: namratadhaka@gmail.com; rita.genomics@gmail.com

Affiliations: Jawaharlal Nehru University, New Delhi; Central University of Haryana; Jawaharlal Nehru University, New Delhi; Birla Institute of Technology & Science Pilani (BITS Pilani); Department of Biotechnology (DBT) India; National Agri Food Biotechnology Institute (NABI)

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Dhaka, Namrata	ABE-6517-2021	
Yadav, Dr Garima	ADL-1304-2022	
Dhaka, Namrata		0000-0002-7832-4684

Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Plant Sciences

Research Areas: Plant Sciences

IDS Number: F1X0C

ISSN: 0140-7791

eISSN: 1365-3040

29-char Source Abbrev.: PLANT CELL ENVIRON

ISO Source Abbrev.: Plant Cell Environ.

Source Item Page Count: 29

Funding:

Funding Agency	Grant Number
This study was supported by Science and Engineering Research Board (SERB) and Department of Science Technology (DST), Government of India, grant/award numbers: CRG/2019/001695; IFA17-LSP90; CRG/2020/003466; and STR/2022/000013) and Indo-German Science	CRG/2019/001695

Science and Engineering Research Board (SERB)	IFA17-LSP90
DST INSPIRE	CRG/2020/003466 STR/2022/000013
Government of India	IGST/WISER2023/RS/39/2023-24/771
Indo-German Science & Technology Centre (IGSTC)	
CSIR-UGC for the junior research fellowship	CRG/2019/001695
SERB	
Jawaharlal Nehru University, New Delhi	

N.D. thanks research grant from the Science and Engineering Research Board (SERB), (CRG/2019/001695) and DST INSPIRE grant IFA17-LSP90 by Government of India. R.A.S. thanks CRG/2020/003466 and STR/2022/000013 and Indo-German Science & Technology Centre (IGSTC), WISER grant/award number: IGST/WISER2023/RS/39/2023-24/771. R.J. acknowledges financial assistance through an ICMR-SRF fellowship. G.Y. thanks CSIR-UGC for the junior research fellowship. P.P. thanks SERB for fellowship through the manpower component of the CRG/2019/001695 research grant. The authors are thankful for the facilities provided by Jawaharlal Nehru University, New Delhi and Central University of Haryana, Mahendergarh.

Output Date: 2024-10-01

Record 24 of 29

Title: FPGA Implementation of an Effective Image Enhancement Algorithm Based on a Novel Daubechies Wavelet Filter Bank

Author(s): Islam, MT (Islam, Md Tarikul); Samantaray, AK (Samantaray, Aswini Kumar); Gorre, P (Gorre, Pradeep); Jatoth, DN (Jatoth, Deepak Naik); Kumar, S (Kumar, Sandeep); Al-Shidaifat, A (Al-Shidaifat, Alaaddin); Song, HJ (Song, Hanjung)

Source: CIRCUITS SYSTEMS AND SIGNAL PROCESSING **DOI:** 10.1007/s00034-024-02842-8 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 19

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 31

Abstract: The primary issues in producing natural images are low contrast and poor quality. A novel Daubechies wavelet transform technique is proposed for image enhancement which is implemented in field-programmable gate array (FPGA). The new Daubechies-2 (tap-4) wavelet filter bank is splits the image into high-pass subband image and low-pass subband image. These subbands are enhanced parallely using FPGA architectures of adaptive thresholding and top-hat transform. High-pass subband images are improved by employing FPGA architecture of adaptive thresholding technique. The FPGA architecture of morphology-based top-hat transform is used to improve low-pass subband images. The FPGA architecture of newly designed Daubechies-2 wavelet, adaptive thresholding and morphology based top-hat transform, are implemented in FPGA using XilinX Kintex-7 board. The hardware usage of the proposed technique is compared with that of existing techniques. In addition, PSNR and RMSE are used to assess the extent to which the suggested method performs. Experiments revealed that this technique is excellent at both enhancing an image's details and effectively preserving its edge features with using less hardware.

Accession Number: WOS:001315929300011

Language: English

Document Type: Article; Early Access

Author Keywords: Image enhancement; Adaptive threholding; Top-Hat transform; Daubechies wavelet; Peak signal to noise ratio

KeyWords Plus: DESIGN

Addresses: [Islam, Md Tarikul; Jatoth, Deepak Naik; Al-Shidaifat, Alaaddin; Song, Hanjung] Inje Univ, Ctr Nano Mfg, Dept Nano Sci & Engn, Gimhae 621749, South Korea.
[Samantaray, Aswini Kumar] Manipal Inst Technol Bengaluru, Manipal Acad Higher Educ, Dept Elect & Commun Engn, Manipal, India.
[Gorre, Pradeep] Vignans Fdn Sci Technol & Res, Dept Elect & Commun Engn, Guntur, India.
[Kumar, Sandeep] Jawaharlal Nehru Univ, Special Ctr NanoSci, New Delhi, India.

Corresponding Address: Song, HJ (corresponding author), Inje Univ, Ctr Nano Mfg, Dept Nano Sci & Engn, Gimhae 621749, South Korea.
Samantaray, AK (corresponding author), Manipal Inst Technol Bengaluru, Manipal Acad Higher Educ, Dept Elect & Commun Engn, Manipal, India.

E-mail Addresses: tarikulislamdaffodil@gmail.com; aswini.samantaray@manipal.edu; pradeepgorre@gmail.com; jatothdeepaknaik@gmail.com; fedrer.engg@gmail.com; alaaddin@inje.ac.kr; hjsong@inje.ac.kr

Affiliations: Inje University; Manipal Academy of Higher Education (MAHE); Vignan's Foundation for Science, Technology & Research (VFSTR); Jawaharlal Nehru University, New Delhi; Special Centre for Nanoscience, Jawaharlal Nehru University

Publisher: SPRINGER BIRKHAUSER

Publisher Address: 233 SPRING STREET, 6TH FLOOR, NEW YORK, NY 10013 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Engineering, Electrical & Electronic

Research Areas: Engineering

IDS Number: G3U5T

ISSN: 0278-081X

eISSN: 1531-5878

29-char Source Abbrev.: CIRC SYST SIGNAL PR

ISO Source Abbrev.: Circuits Syst. Signal Process.

Source Item Page Count: 22

Funding:

Funding Agency	Grant Number
Korea government(MSIT)	NRF-2022R1F1A1063656
National Research Foundation of Korea(NRF) - Korea government(MSIT)	
IC Design Education Center(IDEC), Korea	

This work was supported by the National Research Foundation of Korea(NRF) grant funded by the Korea government(MSIT)(NRF-2022R1F1A1063656). The chip fabrication and EDA tool were supported by the IC Design Education Center(IDEC), Korea.

Output Date: 2024-10-01

Record 25 of 29

Title: Evaluation of Land Use Land Cover Changes in Response to Land Surface Temperature With Satellite Indices and Remote Sensing Data

Author(s): Zhao, Q (Zhao, Qun); Haseeb, M (Haseeb, Muhammad); Wang, XY (Wang, Xinyao); Zheng, XT (Zheng, Xiangtian); Tahir, Z (Tahir, Zainab); Ghafoor, S (Ghafoor, Sundas); Mubbin, M (Mubbin, Muhammad); Kumar, RP (Kumar, Ram Pravesh); Purohit, S (Purohit, Sanju); Soufan, W (Soufan, Walid); Almutairi, KF (Almutairi, Khalid F.)

Source: RANGELAND ECOLOGY & MANAGEMENT **Volume:** 96 **Pages:** 183-196 **DOI:** 10.1016/j.rama.2024.07.003 **Published Date:** 2024 SEP

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 4

Usage Count (Since 2013): 4

Cited Reference Count: 89

Abstract: Land use and land cover (LULC) changes are known as the main factors causing soil degradation, which presents considerable obstacles to maintaining soil quality and the resilience of ecosystems. Human activities substantially impact LULC changes, particularly in areas experiencing rapid development. The objective of this study is to assess the changes in LULC, land surface temperature (LST), Normalized Differentiate Vegetation Index (NDVI), and Normalized Differentiate Built-up Index (NDBI) in Kasur District from 1991 to 2021. The study analyzed five major LULC classes: Water bodies, Urban areas, barren land, forest Cover, and vegetated areas. Our analysis revealed that the Urban area of Kasur expanded by around 16.27%. The vegetation cover experienced a slight decline of just 1%, while water bodies declined by 0.26%. Forest cover experienced a decrease of about 0.54%, and bare land decreased significantly by 14.4%. The imagery classification achieved an overall accuracy of 88% to 92%. The highest NDVI value was observed in 1991 (+ 0.89), while the lowest was in 2021 (+ 0.56). Similarly, the highest NDBI recorded was + 0.83 in 2021, while the lowest was + 0.65 in 1991. The linear regression analysis revealed a strong negative association between the NDVI and NDBI. LST results exhibited a 0.55 degrees C increase between the years 1991 and 2021. The study's findings align with the Sustainable Development Goals (SDGs), particularly SDG-15, which aims to protect, restore, and promote sustainable use of terrestrial ecosystems, sustain- ably manage forests, combat desertification, and halt land degradation and biodiversity loss. (c) 2024 The Society for Range Management. Published by Elsevier Inc. All rights are reserved, including those for text and data mining, AI training, and similar technologies.

Accession Number: WOS:001299632700001

Language: English

Document Type: Article

Author Keywords: Soil degradation; Climate change; Geospatial techniques; Pakistan

KeyWords Plus: USE/COVER CHANGE; GIS; CLASSIFICATION; URBANIZATION; CYCLES; WATER; CITY; LST

Addresses: [Zhao, Qun; Wang, Xinyao; Zheng, Xiangtian] Nanjing Inst Technol, Sch Comp Engn, Nanjing 211167, Peoples R China.
[Haseeb, Muhammad] Univ Punjab, Dept Space Sci, Lahore 54780, Pakistan.
[Tahir, Zainab; Ghafoor, Sundas] Univ Punjab, Ctr Geog Informat Syst CGIS, Lahore 54780, Pakistan.
[Mubbin, Muhammad] Univ Witwatersrand, Sch Geog Archaeol & Environm Studies, Johannesburg, South Africa.
[Kumar, Ram Pravesh] Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi 110067, India.
[Purohit, Sanju] Akamai Univ, Dept Environm Ecol Studies & Sustainabil, Waimea, HI 96743 USA.
[Almutairi, Khalid F.] King Saud Univ, Coll Food & Agr Sci, Plant Prod Dept, Riyadh 11451, Saudi Arabia.

Corresponding Address: Zheng, XT (corresponding author), Nanjing Inst Technol, Sch Comp Engn, Nanjing 211167, Peoples R China.

E-mail Addresses: zxt@njit.edu.cn

Affiliations: Nanjing Institute of Technology; University of Punjab; University of Punjab; University of Witwatersrand; Jawaharlal Nehru University, New Delhi; King Saud University

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Zheng, Xiangtian	JRX-5831-2023	
Purohit, Dr. Sanju	JUF-2631-2023	
Kumar, Ram	JCE-2078-2023	

Haseeb, Muhammad	J-6858-2014	
Almutairi, Khalid F.	AAG-5737-2021	0000-0002-0826-4241
Tahir, Zainab		0000-0002-1459-3527
Mubbin, Muhammad	KIA-8398-2024	0000-0002-9515-9561
Purohit, Sanju		0009-0004-8951-7520
Haseeb, Muhammad	LEL-9400-2024	0000-0002-3473-6396

Publisher: ELSEVIER

Publisher Address: RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Ecology; Environmental Sciences

Research Areas: Environmental Sciences & Ecology

IDS Number: D9X3O

ISSN: 1550-7424

eISSN: 1551-5028

29-char Source Abbrev.: RANGELAND ECOL MANAG

ISO Source Abbrev.: Rangel. Ecol. Manag.

Source Item Page Count: 14

Funding:

Funding Agency	Grant Number
King Saud University, Riyadh, Saudi Arabia	RSPD2024R561

The authors extend their appreciation to the Researchers supporting project number (RSPD2024R561) King Saud University, Riyadh, Saudi Arabia.

Output Date: 2024-10-01

Record 26 of 29

Title: Statistical Estimation of Uniaxial Compressive Strength in Geotechnical Projects Using Regression Analysis: A Comparative Study

Author(s): Verma, RK (Verma, Rahul Kumar); Singh, R (Singh, Rajesh); Kumar, V (Kumar, Vijay); Singh, TN (Singh, T. N.); Umrao, RK (Umrao, Ravi Kumar); Mishra, P (Mishra, Pranshu); Sharma, P (Sharma, Prateek)

Source: INTERNATIONAL JOURNAL OF GEOMECHANICS **Volume:** 24 **Issue:** 9 **Article Number:** 05024009 **DOI:** 10.1061/IJGNAI.GMENG-9384 **Published Date:** 2024 SEP 1

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 1

Usage Count (Since 2013): 1

Cited Reference Count: 42

Abstract: The present study focuses on the estimation of uniaxial compressive strength (UCS) in geotechnical projects. UCS is a crucial parameter in designing such projects, and traditional methods of measurement outlined by standards are often time-consuming and cumbersome. Additionally, obtaining standard core samples is always a challenging task in fractured or discontinuous rock masses. To overcome these limitations, alternative techniques such as simple regression (SR), multivariable regression (MVR), and artificial intelligence (AI) have been utilized to estimate UCS based on easily derived geotechnical parameters. While SR and MVR provide simple equations that can be used without the need for complex calculations, AI techniques offer the potential for higher prediction accuracy. However, AI models often require more complex solutions due to their intricate algorithms and computational processes. This makes AI less practical for ongoing geotechnical projects in which simple and quick estimations are often preferred. In this study, both the SR and the MVR models were employed to estimate the UCS using the Schmidt hammer rebound number (RN),

density (rho), porosity (phi), and point load index (Is50) as input parameters. Various SR and MVR models were tested, and the best-performing models were selected based on performance indices such as the normalized root mean square error (NRMSE), relative root mean square error (RRMSE), variance accounted for (VAF), efficiency (E), and correlation coefficient (R2). Furthermore, this study proposes a new performance index (PImod) to evaluate the predictive capabilities of the models. This index likely incorporates additional criteria or metrics beyond the aforementioned traditional performance indices. Overall, the equations derived from the regression models in this study offer a simpler and more practical approach for geotechnical practitioners to quickly assess UCS in any given area, providing a useful tool for their work.

Accession Number: WOS:001272356000022

Language: English

Document Type: Article

Author Keywords: Uniaxial compressive strength (UCS); Multivariable regression; Simple regression; Performance indices; Geotechnical stability

KeyWords Plus: SCHMIDT HAMMER; FUZZY MODEL; PREDICTION; HARDNESS; MODULUS; TESTS

Addresses: [Verma, Rahul Kumar; Singh, Rajesh; Mishra, Pranshu; Sharma, Prateek] Univ Lucknow, Dept Geol, Rock Sci & Rock Engn Lab, Lucknow 226007, India.
[Kumar, Vijay] Motilal Nehru Natl Inst Technol, Dept Civil Engn, Prayagraj 211004, India.
[Singh, T. N.] Indian Inst Technol, Dept Earth Sci, Mumbai 400076, India.
[Umrao, Ravi Kumar] Jawaharlal Nehru Univ, Sch Environm Sci, New Delhi 110067, India.

Corresponding Address: Singh, R (corresponding author), Univ Lucknow, Dept Geol, Rock Sci & Rock Engn Lab, Lucknow 226007, India.

E-mail Addresses: georajeshsingh@gmail.com

Affiliations: Lucknow University; National Institute of Technology (NIT System); Motilal Nehru National Institute of Technology; Indian Institute of Technology System (IIT System); Indian Institute of Technology (IIT) - Bombay; Jawaharlal Nehru University, New Delhi

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Verma, Rahul Kumar	IQU-9664-2023	
Kumar, Vijay	AAX-2789-2021	
Umrao, Ravi Kumar		0009-0009-2799-3843
Singh, Rajesh	O-9084-2014	0000-0003-1820-8865
VERMA, Dr. RAHUL KUMAR		0000-0002-3455-2933

Publisher: ASCE-AMER SOC CIVIL ENGINEERS

Publisher Address: 1801 ALEXANDER BELL DR, RESTON, VA 20191-4400 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Engineering, Geological

Research Areas: Engineering

IDS Number: YZ6T6

ISSN: 1532-3641

eISSN: 1943-5622

29-char Source Abbrev.: INT J GEOMECH

ISO Source Abbrev.: Int. J. Geomech.

Source Item Page Count: 10

Funding:

Funding Agency	Grant Number
Natural Resources Data Management System, Department of Science and Technology	NRDMS/02/64/017

Government of India	

The authors are thankful to the Head, Department of Geology, University of Lucknow, Lucknow, for valuable suggestions and encouragement. This study was carried out under the research project sponsored by the Natural Resources Data Management System, Department of Science and Technology (Grant No. NRDMS/02/64/017), Government of India.

Output Date: 2024-10-01

Record 27 of 29

Title: Inhibition of PERK-mediated unfolded protein response acts as a switch for reversal of residual senescence and as senolytic therapy in glioblastoma

Author(s): Ketkar, M (Ketkar, Madhura); Desai, S (Desai, Sanket); Rana, P (Rana, Pranav); Thorat, R (Thorat, Rahul); Epari, S (Epari, Sridhar); Dutt, A (Dutt, Amit); Dutt, S (Dutt, Shilpee)

Source: NEURO-ONCOLOGY **DOI:** 10.1093/neuonc/noae134 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 3

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 1

Usage Count (Since 2013): 1

Cited Reference Count: 51

Abstract: Background Glioblastoma due to recurrence is clinically challenging with 10-15 months overall survival. Previously we showed that therapy-induced senescence (TIS) in glioblastoma reverses causing recurrence. Here, we aim to delineate the TIS reversal mechanism for potential therapeutic intervention to prevent glioblastoma (GBM) recurrence.Methods Residual senescent (RS) and end of residual senescence (ERS) cells were captured from GBM patient-derived primary-cultures and cell lines mimicking clinical scenarios. RNA-sequencing, transcript/protein validations, knock-down/inhibitor studies, ChIP RT-PCR, biochemical assays, and IHCs were performed for the mechanistics of TIS reversal. In vivo validations were conducted in GBM orthotopic mouse model.Results Transcriptome analysis showed co-expression of endoplasmic reticulum (ER) stress-unfolded protein response (UPR) and senescence-associated secretory phenotype (SASP) with TIS induction and reversal. Robust SASP production and secretion by RS cells could induce senescence, Reactive oxygen specis (ROS), DNA damage, and ER stress in paracrine fashion independent of radiation. Neutralization of most significantly enriched cytokine from RS-secretome IL1 beta, suppressed SASP, and delayed senescence reversal. Mechanistically, with SASP and massive protein accumulation in ER, RS cells displayed stressed ER morphology, upregulated ER stress markers, and PERK pathway activation via peIF2 alpha-ATF4-CHOP which was spontaneously resolved in ERS. ChIP RT-PCR showed CHOP occupancy at CXCL8/IL8, CDKN1A/p21, and BCL2L1/BCLXL aiding survival. PERK knockdown/inhibition with GSK2606414 in combination with radiation led to sustained ER stress and senescence without SASP. PERKi in RS functioned as senolytic via apoptosis and prevented recurrence in vitro and in vivo ameliorating overall survival.Conclusion We demonstrate that PERK-mediated UPR regulates senescence reversal and its inhibition can be exploited as a potential seno-therapeutic option in glioblastoma. Graphical Abstract

Accession Number: WOS:001303477400001

Language: English

Document Type: Article; Early Access

Author Keywords: ER stress; glioblastoma; PERK; TIS reversal; unfolded protein response

KeyWords Plus: ENDOPLASMIC-RETICULUM; CELLULAR SENESCENCE; TUMOR PROGRESSION; CANCER-CELLS; DNA-DAMAGE; GROWTH; REGULATOR; PHENOTYPE; ESCAPE; STRESS

Addresses: [Ketkar, Madhura; Rana, Pranav; Dutt, Shilpee] Tata Mem Hosp, Adv Ctr Treatment Res & Educ Canc, Shilpee Dutt Lab, Navi Mumbai 410210, India.
[Dutt, Shilpee] Adv Ctr Treatment Res Educ Canc ACTREC, Integrated Genom Lab, Navi Mumbai 410210,

India.
[Desai, Sanket; Dutt, Amit] Tata Mem Ctr TMC, Adv Ctr Treatment Res & Educ Canc ACTREC, Lab Anim Facil, Navi Mumbai 410210, India.
[Ketkar, Madhura; Desai, Sanket; Dutt, Amit] Training Sch Complex, Homi Bhabha Natl Inst, Mumbai 400094, India.
[Dutt, Amit] Univ Delhi, Dept Genet, Integrated Canc Genom Lab, South Campus,Benito Juarez Marg, New Delhi 110021, India.
[Thorat, Rahul] Tata Mem Ctr TMC, Adv Ctr Treatment Res & Educ Canc ACTREC, Lab Anim Facil, Navi Mumbai 410210, India.
[Epari, Sridhar] Tata Mem Hosp, Adv Ctr Treatment, Res & Educ Canc, Navi Mumbai 410210, India.

Corresponding Address: Dutt, S (corresponding author), Jawaharlal Nehru Univ, Sch Life Sci, New Mehrauli Rd, New Delhi, India.

E-mail Addresses: shilpeedutt@mail.jnu.ac.in

Affiliations: Tata Memorial Centre (TMC); Advance Centre for Treatment, Research & Education in Cancer (ACTREC); Tata Memorial Hospital; Tata Memorial Centre (TMC); Advance Centre for Treatment, Research & Education in Cancer (ACTREC); Tata Memorial Centre (TMC); Advance Centre for Treatment, Research & Education in Cancer (ACTREC); Homi Bhabha National Institute; University of Delhi; Tata Memorial Centre (TMC); Advance Centre for Treatment, Research & Education in Cancer (ACTREC); Tata Memorial Centre (TMC); Advance Centre for Treatment, Research & Education in Cancer (ACTREC); Tata Memorial Hospital

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Dutt, Shilpee		0000-0002-1292-9461

Publisher: OXFORD UNIV PRESS INC

Publisher Address: JOURNALS DEPT, 2001 EVANS RD, CARY, NC 27513 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Oncology; Clinical Neurology

Research Areas: Oncology; Neurosciences & Neurology

IDS Number: E5N8S

ISSN: 1522-8517

eISSN: 1523-5866

29-char Source Abbrev.: NEURO-ONCOLOGY

ISO Source Abbrev.: Neuro-Oncology

Source Item Page Count: 17

Funding:

Funding Agency	Grant Number
Department of Science and Technology (DST), Government of India	EMR/2017/004994
Department of Biotechnology (DBT), Government of India	BT/PR13863/MED/122/6/2016
Department of Atomic Energy (DAE), Government of India	1/3(7)/2020/TMC/RD-II/8823 1/3(6)/2020/TMC/RD-II/3805

We acknowledge the funding from the Department of Science and Technology (DST), Government of India grant EMR/2017/004994(SD). Department of Biotechnology (DBT), Government of India grant BT/PR13863/MED/122/6/2016 (SD). Department of Atomic Energy (DAE), Government of India grant 1/3(7)/2020/TMC/R&D-II/8823 (SD). Department of Atomic Energy (DAE), Government of India grant 1/3(6)/2020/TMC/R&D-II/3805 (SD).

Output Date: 2024-10-01

Title: Thermally activated damage recovery in ion-irradiated Gd₂Ti₂₋_yZr_yO₇ pyrochlore

Author(s): Singh, Y (Singh, Yogendar); Kumar, A (Kumar, Ajay); Kumar, V (Kumar, Vivek); Chattaraj, A (Chattaraj, Ananya); Pandey, KK (Pandey, Krishan K.); Kulriya, PK (Kulriya, Pawan Kumar)

Source: JOURNAL OF THE AMERICAN CERAMIC SOCIETY **DOI:** 10.1111/jace.20124 **Early Access Date:** SEP 2024 **Published Date:** 2024 SEP 14

Abstract: Ionizing events having a wide variety of radiation-induced effects can radically affect the kinetics of defect production or structural transformation in the pyrochlore structured oxides (A(2)B(2)O(7)). Therefore, a thorough understanding of the kinetics associated with cation ordering and disordering is required for various technological applications. The structural responses of Gd2Ti2-yZryO7 (y = 0.4, 1.2, 1.6) pyrochlore series irradiated by 120 MeV Au9+ ions were investigated using in situ synchrotron x-ray diffraction (SR-XRD), micro-Raman spectroscopy, and scanning electron microscopy (SEM). Each pyrochlore composition irradiated at the highest fluence, where structural modifications occur, was subsequently isochronally annealed from room temperature to 1000 degrees C. The SR-XRD results indicate that Ti-rich composition (y = 0.4) retains its pre-irradiated pyrochlore structure (Fd3<overline>m) at 1000 degrees C. In contrast, Zr-rich compositions exhibit recrystallization to an intermediate defect-fluorite phase (Fm3<overline>m) above 500 degrees C, and the pre-irradiated pyrochlore superstructure does not recover even on annealing at 1000 degrees C. These results reveal that recrystallization temperature strongly depends on the accumulated radiation damage, generally described with the cationic radius ratio (r(A)/r(B)). Thus, investigation of the thermal annealing behavior of irradiated pyrochlores helps better understanding the general mechanisms of radiation damage and recovery of pyrochlores, which is important for their use in nuclear applications.

Accession Number: WOS:001313298500001

Language: English

Document Type: Article; Early Access

Author Keywords: pyrochlore; radiation damage; recrystallization; synchrotron diffraction

KeyWords Plus: CRYSTALLIZATION; TRANSFORMATION; AMORPHIZATION; TRANSITION; DISORDER; FLUORITE; NUCLEAR; GD

Addresses: [Singh, Yogendar; Kumar, Vivek; Kulriya, Pawan Kumar] Jawaharlal Nehru Univ, Sch Phys Sci, New Delhi 110067, India.
[Kumar, Ajay] Nanakchand Anglo Sanskrit NAS Coll, Meerut, Uttar Pradesh, India.
[Chattaraj, Ananya] Jawaharlal Nehru Ctr Adv Sci Res, New Chem Unit, Bengaluru, Karnataka, India.
[Chattaraj, Ananya] KEK, Photon Factory, High Energy Accelerator Res Org, Beamline 18-B, Tsukuba, Ibaraki, Japan.
[Pandey, Krishan K.] Bhabha Atom Res Ctr, High Pressure & Synchrotron Radiat Phys Div, Mumbai, Maharashtra, India.
[Pandey, Krishan K.] Homi Bhabha Natl Inst, Mumbai, Maharashtra, India.

Corresponding Address: Kulriya, PK (corresponding author), Jawaharlal Nehru Univ, Sch Phys Sci, New Delhi 110067, India.

E-mail Addresses: pkkulriya@mail.jnu.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi; Department of Science & Technology (India); Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR); High Energy Accelerator Research Organization (KEK); Bhabha Atomic Research Center (BARC); Homi Bhabha National Institute

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number

Kulriya, Pawan	AAC-6687-2021	
Pandey, Krishan	I-6717-2012	
Kulriya, Prof. Pawan Kumar	H-3391-2011	0000-0001-5563-7584

Publisher: WILEY

Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Materials Science, Ceramics

Research Areas: Materials Science

IDS Number: F9Y8B

ISSN: 0002-7820

eISSN: 1551-2916

29-char Source Abbrev.: J AM CERAM SOC

ISO Source Abbrev.: J. Am. Ceram. Soc.

Source Item Page Count: 10

Funding:

Funding Agency	Grant Number
Ministry of Education, Government of India	PMRF-2122-2836
United Board of Research in Nuclear Sciences (BRNS)	58/14/05/2019-BRNS/37013
Department of Science and Technology, India	

Yogendar Singh acknowledges the Ministry of Education, Government of India, for awarding the Prime Minister's Research Fellowship (PMRF) with reference number PMRF-2122-2836. One of the authors, Pawan Kumar Kulriya, acknowledges the United Board of Research in Nuclear Sciences (BRNS) for providing financial support under project 58/14/05/2019-BRNS/37013. Authors thank the Department of Science and Technology, India, for the financial support during the experiments at the Indian Beamline, PF, KEK, Japan. The authors also acknowledge the Advanced Instrumentation Research Facility (AIRF), JNU, for the Raman spectroscopy and FESEM measurements.

Output Date: 2024-10-01

Record 29 of 29

Title: Computational investigation of novel synthetic analogs of C-1′β substituted remdesivir against RNA-dependent RNA-polymerase of SARS-CoV-2

Author(s): Cardoza, S (Cardoza, Savio); Singh, A (Singh, Anirudh); Sur, S (Sur, Souvik); Singh, M (Singh, Mintu); Dubey, KD (Dubey, Kshatresh D.); Samanta, SK (Samanta, Sintu Kumar); Mandal, A (Mandal, Ajay); Tandon, V (Tandon, Vibha)

Source: HELIYON **Volume:** 10 **Issue:** 17 **Article Number:** e36786 **DOI:** 10.1016/j.heliyon.2024.e36786 **Published Date:** 2024 SEP 15

Times Cited in Web of Science Core Collection: 0

Total Times Cited: 0

Usage Count (Last 180 days): 0

Usage Count (Since 2013): 0

Cited Reference Count: 50

Abstract: Remdesivir, a C-nucleotide prodrug binds to the viral RNA-dependent-RNA polymerase (RdRp) and inhibits the viral replication by terminating RNA transcription prematurely. It is reported in literature that interaction between the C-1'(-CN (- CN moiety of Remdesivir (RDV) RDV) and the Ser861 residue in RdRp enzyme, causes a delayed chain termination during the RNA replication process and is one of the important aspect of its mechanism of action. In the pursuance of increasing the biological activity of RDV and enhancing

the SAR studies, against RNA viruses, we have designed its fourteen C1'((substituted analogs, 10 - 23 bearing 4/5-membered heterocyclic rings. The docking and 100 ns molecular dynamics (MD) simulations of 10-23- 23 to the RdRp protein (PDB ID: 7L1F) revealed important interactions between 2',3'-diol, oxo group of phosphoramidate, nitrogen residues of heterocyclic rings of synthetic molecules with Arg555, Arg553, Ser759, Cys622, Asn691, Asp623 amino acid residues of protein. The docking score of 2-ethylbutyl ((S) (((2R,3S,4R,5R)-5-(4-aminopyrrolo[2,1-f][1,2,4]triazin-7-yl)-3,4-dihydroxy-5-(1H-1,2,3-triazol4-yl)tetrahydrofuran-2-yl)methoxy)(phenoxy)phosphoryl)-L-alaninate, 11 was found to be the higher than RDV among 14 new compounds i.e.-5.20 kcal/mol. Out of 3 compounds, 10 , 12 and 13 submitted for MD simulations and Molecular Mechanics Poisson-Boltzmann Surface Area (MMPBSA) analysis, trifluoro-oxadiazole derivative, 13 showed higher binding energy as compared to Remdesivir. The predicted ADMET properties of 14 compounds showed their potential for being drug candidates. The present study suggests that substitution at the C1'((position by 4/5-membered rings plays an important role in the interactions between nucleoside/tide and target protein.

Accession Number: WOS:001303888700001

PubMed ID: 39286185

Language: English

Document Type: Article

Author Keywords: Remdesivir analogs; Molecular docking; MD simulations

KeyWords Plus: ANTIVIRAL COMPOUNDS; TOOL; NUCLEOSIDES; MECHANISM; RIBAVIRIN; EBOLA

Addresses: [Cardoza, Savio; Singh, Mintu; Tandon, Vibha] Jawaharlal Nehru Univ, Special Ctr Mol Med, New Delhi 110067, India.
[Singh, Anirudh; Samanta, Sintu Kumar] Indian Inst Informat Technol Allahabad, Dept Appl Sci, Allahabad 211012, Uttar Pradesh, India.
[Sur, Souvik] Teerthanker Mahaveer Univ, Res & Dev Ctr, Moradabad 240001, Uttar Pradesh, India.
[Dubey, Kshatresh D.] Shiv Nadar Univ, Dept Chem, Gautam Buddha Nagar 201314, Uttar Pradesh, India.
[Mandal, Ajay] Univ Hyderabad, Symbol Discovery Ltd, ASPIRE TBI, Sch Life Sci, Hyderabad 500046, India.
[Tandon, Vibha] CSIR Indian Inst Chem Biol IICB, 4,Raja S C Mullick Rd, Kolkata 700032, India.

Corresponding Address: Tandon, V (corresponding author), Jawaharlal Nehru Univ, Special Ctr Mol Med, New Delhi 110067, India.

E-mail Addresses: vtandon@mail.jnu.ac.in

Affiliations: Jawaharlal Nehru University, New Delhi; Indian Institute of Information Technology Allahabad; Teerthanker Mahaveer University; Shiv Nadar University; University of Hyderabad; Council of Scientific & Industrial Research (CSIR) - India; CSIR - Indian Institute of Chemical Biology (IICB)

Author Identifiers:

Author	Web of Science ResearcherID	ORCID Number
Dubey, Kshatresh	F-3097-2012	

Publisher: CELL PRESS

Publisher Address: 50 HAMPSHIRE ST, FLOOR 5, CAMBRIDGE, MA 02139 USA

Web of Science Index: Science Citation Index Expanded (SCI-EXPANDED)

Web of Science Categories: Multidisciplinary Sciences

Research Areas: Science & Technology - Other Topics

IDS Number: E6D4L

eISSN: 2405-8440

29-char Source Abbrev.: HELIYON

ISO Source Abbrev.: Heliyon

Source Item Page Count: 14

Funding:

Funding Agency	Grant Number
DST-SERB-CRG sponsored	SPG/2021/004179
DBT-BIRAC-AMR	BT/PR31944/MED/29/1408/2019
UGC	
CSIR-SRF	
ICMR	2021-13818/SCR/ADHOC-BMS

The work was supported by the DST-SERB-CRG sponsored project no. SPG/2021/004179, and DBT-BIRAC-AMR grant no. BT/PR31944/MED/29/1408/2019 sanctioned to Prof. Vibha Tandon, SCMM, JNU. SC and MS acknowledge the fellowship support from UGC, CSIR-SRF and ICMR project no 2021-13818/SCR/ADHOC-BMS.

Open Access: gold

Output Date: 2024-10-01

End of File