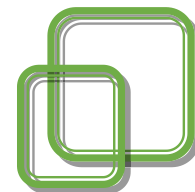




SOCIETY FOR ETHNOPHARMACOLOGY, INDIA (SFE - INDIA)

NEWS LETTER, August-December 2019

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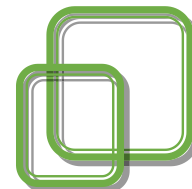
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Message from the secretary

Dear Friends,

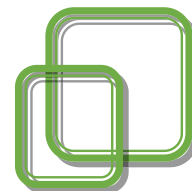
The Society for Ethnopharmacology has witnessed six international congresses, six national conventions and many other scientific meetings organized by local chapters of SFE. You have witnessed the 6th Convention of SFE, organized at Jadavpur University, Kolkata during September 7-8, 2019. This event was organized by School of Natural Product Studies, Jadavpur University, Kolkata. The convention has evidenced participation of over 300 delegates from different parts of the country and had more than 95 scientific presentations. Target is to publish the special issue on *Tinospora cordifolia* in future.

A special issue on Aswagandha (*Withania somnifera*) will be published in the Journal of Ethnopharmacology (Elsevier) through our society, which is an outcome of earlier convention. The 7th International Congress of the Society for Ethnopharmacology, (SFEC 2020) is going to be organized at Jamia Hamdard, New Delhi, during February 15-17, 2020. I would like to request you to join this event.

On behalf of the SFE, I would like to express our sincere thanks to all the members and specifically the members of the executive board, Editorial board of the newsletter, Coordinators for the local chapters for their hard work for promotion of the society.

I would like to request you all to join the forum and explore the opportunities.

Professor Pulok K. Mukherjee, FRSC, FNASc, FWAST
Secretary, SFE



Featured article

Solo (*Rhodiola rosea*) - the wonder plant of Ladakh and Uttarakhand

Dr Tapan Mukherjee

New Delhi

Solo plant of Ladakh came into limelight when Prime Minister said that *Solo* herb could work as a modern day *Sanjeevani* for security personnel deployed in snow-clad mountains. It maintains the body's immune system in areas with low oxygen. *Solo* is the local name of the herb *Rhodiola rosea*, which grows wild in Ladakh and upper hills of Uttarakhand. It's the leafy parts of the plant that are



commonly used as a vegetable by locals. Some believe that the plant is the end to the quest for *Sanjeevani*, herb mentioned in *Ramayan*. Solo, Golden root or Rose root (*Rhodiola rosea* L.), belonging to family Crassulaceae grows primarily in dry sandy ground at high altitudes in the arctic areas of Europe and Asia. The plant reaches a height of 70cm and produces yellow blossoms. It is a perennial herb with a thick rhizome, fragrant when cut. The genus *Rhodiola* L. comprises

approximately 96 species found in the alpine regions of Asia and Europe. A total of 73 species, 2 subspecies and 7 varieties are found in China.^{1,2} The Greek physician, Dioscorides, first recorded medicinal applications of *rodariza* in 77 C.E. in *De Materia Medica*. Linnaeus renamed it *Rhodiola rosea*, referring to the rose-like attar (fragrance) of the fresh cut rootstock. For centuries, *R. rosea* has been used in the traditional medicine of Russia, Scandinavia, and other countries³. Between 1725 and 1960, various medicinal applications of *R. rosea* appeared in the scientific literature of Sweden, Norway, France, Germany, the Soviet Union, and Iceland. Since 1960, more than 200 pharmacological, phytochemical, and clinical studies have been published. *R. rosea* has been reported to protect animals and humans from mental and physical stress, toxins, and cold. *R. rosea* is used as traditional or folk medicine to increase physical endurance, work productivity, longevity, resistance to high altitude sickness, and to treat fatigue, depression, anaemia, impotence, gastrointestinal ailments, infections, and nervous system disorders. In Middle Asia, *R. rosea* tea is taken for effective treatment for cold and flu during severe Asian winters. Mongolian doctors prescribe it for tuberculosis and cancer.⁴

Solo, Golden root or Roseroot (*Rhodiola rosea* L.), belongs to family Crassulaceae grows primarily in dry sandy ground at high altitudes in the arctic areas of Europe and Asia. The plant reaches a height of 70cm and produces yellow blossoms. It is a perennial herb with a thick rhizome, fragrant when cut. The Greek physician, Dioscorides, first recorded medicinal applications of *rodariza* in 77 C.E. in *De Materia Medica*. Linnaeus renamed it *Rhodiola rosea*, referring to the rose-like attar (fragrance) of the fresh cut root stock.



R. rosea is a perennial plant with a thick rhizome and yellow, fragrant flowers. It grows in sandy soil at high altitudes in the arctic areas of Europe and Asia, including eastern Siberia. The plant reaches a height of 30 to 76 cm, unique chemical constituents distinguishes *R. rosea* from other *Rhodiola* species.⁵ Approximately 140 compounds were reported from roots and rhizome, such as monoterpene alcohols and their glycosides, cyanogenic glycosides, aryl glycosides, phenylethanoids, phenylpropanoids and their glycosides, flavonoids, flavonlignans, proanthocyanidins and gallic acid derivatives. *Rhodiola* preparations exhibited adaptogenic effect including, neuroprotective, cardioprotective, anti-fatigue, antidepressive, anxiolytic, nootropic, life-span increasing effects and CNS are stimulating activity. Cinnamic alcohol, chlorogenic acid, rhodiocyanoside, rosiridin, rosavin, phenolic compounds salidroside, rhodiolin and a compound consisting of viridoside, mongrholoside were reported from *Rhodiola* sp.⁶⁻⁸

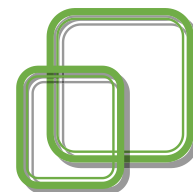
The chemical composition of the essential oil from *R. rosea* root growing in different countries varies. For example, rosavin, rosarin, and rosin at their highest concentration found only in *R. rosea* of Russian origin; the main component of the essential oil from *Rhodiola* growing in Bulgaria are geraniol and myrtilol, in China, the main components are geraniol and 1-octanol; and in the main component is phenyl alcohol. Cinnamyl alcohol was discovered only in the sample from Bulgaria. Leaves and shoots are eaten raw, having a bitter flavour, or cooked like spinach, and are sometimes added to salads. An extract is sometimes added as flavouring in vodkas. *R. rosea* has been used for centuries to cope with the cold Siberian climate and stressful life. It is also used to increase physical endurance and resistance to high-altitude sickness, but the scientific evidence for such benefits is weak. The plant has been used in Traditional Chinese Medicine (TCM), where it is called *hóngjīng tiān*.⁹⁻

¹²Defence Institute of High Altitude Research (DIHAR), based in Leh, has been studying the plant for more than a decade to explore its therapeutic values. The plant has ample scope for further research.

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News



Nanocurcumin Enhances BCG Vaccine Efficacy

A study carried out on mice models has found that curcumin in nanoparticle form has the potential to enhance the efficacy of BCG vaccine such that it confers protection against adult pulmonary TB. The researchers found that injecting curcumin nanoparticles soon after vaccinating the mice with BCG produced an appreciable enhancement of immune memory cells (T central memory cells) responsible for long-term protection against TB infection. BCG vaccine is effective against disseminated and meningeal TB in young children. But the protection does not last for long as the host-protective immune responses that the vaccine induces diminishes over time. Thus, the vaccine is not protective in adults.

Enhanced efficacy

The team led by Gobardhan Das and Anand Ranganathan from the Special Centre for Molecular Medicine at the Jawaharlal Nehru University (JNU) demonstrated in mice models that curcumin nanoparticles enhance vaccine efficacy in two important ways. The work was done in collaboration with KIIT University, Bhubaneswar. The [results were published](#) in the journal *Infection and Immunity*. In children, the vaccine induces two types of immune cells — effector memory T cells and central memory T cells. While the effector memory T cells play a crucial role in mounting an immediate immune response against virulent TB bacteria and kill them, the central memory T cells help in long-term protection in children from childhood TB. After persisting for some time, the central memory cells ultimately diminish. As a result, the protection does not last beyond childhood and adults become vulnerable to TB infection despite BCG vaccination. One way of enhancing the efficacy of the BCG vaccine is by increasing the number of central memory cells so they last longer and confer protection for longer duration. In nature, dynamic balance exists between the two types of immune T cells — central memory cells and effector memory cells. Altering the ratio to increase the number of central memory cells will help in enhancing the efficacy of the BCG vaccine. —~~W~~ were able to enhance the ratio of these two cell types by using curcumin nanoparticles,” says Prof. Das.

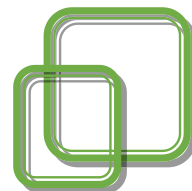
More memory cells

Increasing the number of central memory cells with respect to the effector memory cells was achieved through a simple process. The potassium ion channel (Kv1.3) is required for the differentiation of central memory cells into effector memory T cells. —~~Im~~nice, the nanocurcumin blocks this channel and as a result the conversion of central memory cells into effector memory cells is under check. So the number of central memory cells increases leading to better vaccine efficacy,” says Shaheer Ahmad from JNU, the first author of the paper. Curcumin also helps in the activation of innate immune cells known as macrophages and dendritic cells. TB bacteria reside and grow inside the macrophages. But once activated by curcumin nanoparticles, the macrophages and dendritic cells clear the bacteria and also enhance the level of TB-specific acquired immune cells (Th1 and Th17 cells).

Multipronged effect

—Curcumin nanoparticles not only increase the level of TB-specific acquired immune cells Th1 and Th17 but also simultaneously reduce the level of certain other cells (Th2 and Tregs) thus improving the efficacy of the BCG vaccine,” says Prof. Das. After TB infection, the levels of Th2 and Tregs cells increase and they inhibit the host-protective effect of Th1 and Th17 responses. So, blocking or reducing the level of Th2 and Tregs cells enhances the vaccine efficacy. The capacity of curcumin nanoparticles to modulate vaccine efficacy was tested in mice model. Following vaccination, the mice were treated with curcumin nanoparticles and then infected with TB bacteria. —We measured the bacterial burden in the lungs and spleen several times and observed that mice treated with curcumin nanoparticles had much less bacterial load than the controls,” says Ahmad. —We are quite excited by this result and are hopeful further studies would take it to a stage where its application becomes a reality,” says Prof. Ranganathan.

Source: The Hindu



Report of congresses

6th Convention of Society for Ethnopharmacology & National Seminar on

“Translational Research of Traditionally used n Medicinal Plants with special reference to Tinospora cordifolia held at Kolkata during 07-08 September 2019

6th Convention of Society for Ethnopharmacology & National Seminar on —ānslational Research of Traditionally used n Medicinal Pla nts with speci al reference to Tinospor a cordifolia was held at Kolkata du ring 07-08 September 2019. The programme was star ted wi th a gr and inaugural programme at Dr. Triguna Sen Auditorium, Jadavpur University, Kolkata on 7th September 2019 by lighting lamp in the presence of all dignitaries.

Dr. Pulok K. Mukherjee, Organizing Secretary, of the seminar kindly extended warm welcome to the guests an d participants.

Following is the list of guests from academia, admini stration and industries who graced the occasion a nd expre ssed their thought o n the topic of the National semi nar. During this programme all gues ts, Executive committee members and SFE coordi nators we re felicitated.

List of the guests:

Dr. Chiranjib Bhattacharjee, Pro-VC, JU, Kolkata
Dr Thirumalachari Ramasami, Former Secretary, DST, New Delhi
Dr. Tanuja Nesari, Director, All India Institute of Ayurveda, a nd CEO, NMPB, New Delhi
Shri. Shekhar Dutt, Former Governor, State of Chhattisgarh
Dr. C.K Ka tiyar, Chairm an, National Seminar, an d CEO, Healthcare & Technical, Emami Ltd., Kolkata
Dr. Pankaj Kumar Roy, Dean, Faculty of ISLM, JU, Kolkata
Mr. B.K.Sarkar, President, SFE-India, Kolkata
Mr. Indraneel Das, Vice President, SFE-India, Kolkata

Key note lec tures were

delivered by Dr. Thirumalachari Ramasami, Former Secr etary, DST, New Delhi on “Translational Research for Human Health Care: An insight” and Dr. Tanuja Nesari, Director, All Instit ute of Ayurveda, New De lhi &CEO, NMPB, New Delhi on” Importance of Tino spora cordifolia in AYUSH systems of medicine”.

Program highlights:

72 Presentations (52 posters; 20 Oral)
14 Speakers
05 Plenary sessions
05 Awards

Fourteen speakers spoke on five plenary sess ions from all sphere of research on ethnopharmacology like, Dr. S hekhar D utt, Dr. Urmila Thatt e, Dr. D.K.Mitra, Dr. V.K.Joshi, Dr. N. Udupa, Dr. S. Rajan, Dr. C.K.Katiyar, Dr. Vijay Kothari, Mr. B.K.Sarkar.

September 7th and 8th were packed with for total 72 scientific presentations, including oral and poster and 5 awards were conferred to the best presenters during the valedictory program in presence of distinguished perso nalities in the field of science, education and indu stries such as, Dr. S. Basu, Registrar, JU, Kolkata, Dr. V Ravichandran, Director, NIPE R, Kolkata, Dr. CK Katiyar, Chairman, National Seminar, Mr. B.K.Sarkar, President, SFE-, Kolkata, Dr. Sitesh C. Bachar, Chairman, Dept. Pharmaceutical Chemistry, Fac ulty of Pharmacy, U niversity of Dhaka, Bang ladesh, Dr. Pulok K Mukherjee, Organizing Secretary & Director, SNPS, JU, Kolkata. In this programme guests spoke on

the impact and outcome of this 2-day seminar. They expressed that this type of programme organized by SFE is creating a conducive environment for conducting research on traditionally used medicines and expected to continue this. The programme was ended with a vote of thanks by Dr. Pallab Kanti Halder, Joint Director, SNPS, JU, Kolkata

Memorable moments that were captured during the conference..



Upcoming congresses



27-29 APRIL 2020
CAPSIS HOTEL
THESSALONIKI, GREECE



Annual congress of the International Society for Ethnopharmacology 2020 (ISE 2020)

20th International Congress International Society for Ethnopharmacology (ISE) April 27-29, 2020

Organized by
School of Pharmacy
Aristotle University of Thessaloniki
Greece

Venue: Capsis Hotel Thessaloniki, Greece

For details you may visit: www.ethnopharmacology2020.org // www.ethnopharmacology.org
Contact: **Dr. Anastasia Karioti**, Organizing Secretary, ISE 2020, Thessaloniki, Greece
E-mail: akarioti@pharm.auth.gr

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Important Dates

Abstract submission site opens	- 15 th August, 2019
Abstract submission deadline	- 30 th November, 2019
Notification of acceptance	- 15 th December, 2019
Early Bird Registration	- 31 st December, 2019
Registration deadline	- 31 st January, 2020
Poster/Oral Presentations	- 15 th -17 th February, 2020

For registration and abstract submission
visit : www.bnpl.org.in

For Further Details, Contact:

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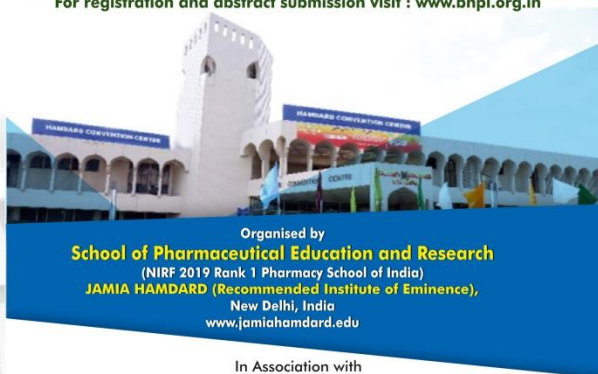
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Society for
Ethnopharmacology, India**

SFEC 2020

February 15-17, 2020

Ethnopharmacology in Development of Scientifically
Validated Quality Products from Medicinal Plants
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**Annual congress of the
Society for Ethnopharmacology, India 2020 (SFEC 2020)**

7th International Congress of Society of Ethnopharmacology, (SFEC 2020) New Delhi

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For details you may visit: www.bnpl.org.in/SFEC-2020.html // www.ethnopharmacology.in

Contact: **Dr Sayeed Ahmad**, Organizing Secretary, SFEC 2020 is our contact person to
update you further in this regard; E-mail: sahmad_jh@yahoo.co.in



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