Spicy insight: Curcumin database to preclude false patent claims

Kolkata: Indian scientists have created the world's first comprehensive open database on curcumin (/tags/curcumin.html) -- the star therapeutic component of the golden Indian spice (/tags/indian-spice.html) turmeric and a hot favourite with researchers across the globe -- to foster innovation and generate public awareness.

The Curcumin Resource Database (CRDB) or portal is a collaborative effort of the Indian Institute of Technology-Guwahati (IIT-G), Institute of Advanced Study on Science and Technology (IASST) and the Central University of South Bihar (CUSB), Patna.

"CRDB has been developed through a detailed survey of published literatures, some of which include information on traditional knowledge on curcumin. To the best of our knowledge, this is the first such database on curcumin in the world," IASST director N. C. Talukdar told IANS.

The portal aims to assist drug design and development and create an understanding among masses about the value of traditional knowledge of turmeric, as evidenced from the bitter patent disputes between India and the West.

The database can also act as a resource for Intellectual Property Rights (IPR) professionals to help prevent

erroneous patents.

The USP of this user-friendly portal is its open-access feature as also the fact that it serves as a guide to the wonder molecule curcumin via four sections -- its analogs, its molecular targets, patents and publications.

With a built-in search engine, the portal encompasses 1,186 curcumin analogs, 195 molecular targets, 9,075 peer-reviewed publications, 489 patents and 176 varieties of turmeric obtained by extensive data mining and careful curation from numerous sources.

Launched in August, the portal has already garnered nearly 23,000 hits.

Talukdar believes the database will "stimulate new innovation" since it will help new innovators avoid repeating research work by showing what has already been done.

In addition, it has a participatory side too. "It will be constantly updated with new information. Scientists anywhere across the world who have dug out new data on turmeric can add them to the database easily," said Utpal Bora, a professor in IIT-G's Department of Biosciences and Bioengineering.

Bora said it is also for the common people who need to be aware of how turmeric components are being harnessed by companies to generate neutraceuticals and a variety of health products that do not require much regulatory control.

"Our own people are not getting the benefits of this secondary agriculture (agriculture that provides value addition to agricultural products)," said Bora.

"It can act as a resource for IPR professionals to help prevent erroneous patents," he added describing the CRDB as an 'additional resource' to the Traditional Knowledge Digital Library (TKDL) with regard to curcumin.

TKDL is India's digital repository on traditional knowledge, especially about medicinal plants and formulations used in Indian systems of medicine.

It is a tool for prevention of misappropriations of traditional knowledge of India and serves as a weapon against erroneous patents (referred to as biopiracy).

In 1995, United States Patent and Trademark Office (USPTO) had granted a patent on the wound healing properties of turmeric. But the patent was revoked in 1997, after India's Council of Scientific and Industrial Research (CSIR), filed a re-examination case with the USPTO.

CSIR argued that turmeric has been used for thousands of years for healing wounds and rashes and therefore its medicinal use was not a novel invention. Their claim was supported by documentary evidence of traditional knowledge, including ancient Sanskrit text and a paper published in 1953.

In August this year, an attempt made by a Britain-based company to patent a medicinal composition comprising turmeric, pine bark and green tea for treating hair loss was prevented by India after the TKDL challenged the claim (filed with the European Patent Office) on the basis that the composition was long being used in the Ayurveda and Unani systems.

According to R S Praveen Raj, activist and former patent examiner of the Indian government, the standalone property of the database is a huge advantage over TKDL.

"Unlike TKDL, CRDB is a great initiative since it is an open source and accessible to all. TKDL is yet to be shared among scientists.

"Traditional knowledge is existing knowledge and not 'inventions' and hence its patenting should be prevented," Raj, senior scientist, CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, told IANS.

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