



Pit viper venom to clot a wound?

Researchers Vivek Kumar and Jeffrey Hartgerink show its possibilities. P Rajendran reports.

Blend a gel with some pit viper venom and apply generously over an open wound. That is how Vivek Kumar and Jeffrey Hartgerink of Rice University stop bleeding.

The duo, who have written a paper about their method in the journal, *ACS Biomaterials Science and Engineering*, have a good idea what they are on about, since SLac, the gel they use, is made up of threads — or nanofibers — one end of which is designed to adhere to cells.

In addition, it is quicker to bring about clotting than the porcine GelFoam in standard use.

The fact that the SLac is made synthetically should be of some reassurance to those worrying about religious injunctions against coming in contact with pork.

Though attempts have been made to generate hemostats from bacterial collagen that could provide another source for GelFoam, such collagen often contains contaminants the body can recognize as a foreign agent and mount an immune response to.

From the medical viewpoint, it is particularly fortuitous that the new gel behaves like a liquid when under pressure — such as in a syringe — and a solid at other times.

SLac acts as a scaffolding to hold and then slowly release batroxobin, the active ingredient from pit viper venom that Kumar and Hartgerink used. Batroxobin is otherwise highly soluble and, without the gel to hold it in

place, could cause coagulation farther downstream in the blood vessel, instead of at the wound itself.

The batroxobin causes coagulation of blood that cannot be stopped even by heparin, a blood thinner that some patients use, and which is still active if GelFoam is used.

Kumar, the son of Ashok Kumar and Nalini Ashok, was born in Singapore. Though no one in his family took to the sciences, Kumar says he was passionate about medicine and engineering. But after earning an undergraduate degree at Northwestern University, he decided that while people in medicine changed thousands of lives, engineering a new drug could save millions.

So, Kumar opted for a bioengineering program at Georgia Tech and Emory University.

He then worked as a research fellow at Beth Israel Deaconess Medical Center, a Harvard University teaching hospital in Boston. Both at the undergraduate level and thereafter Kumar has been involved in work involving blood vessel regeneration.

No wonder then that Kumar, Hargterink and another colleague, Omar Merchant, have set up NangioTx, which develops 'peptide drug formulations for blood vessel growth (angiogenesis) in chronic peripheral vascular disease.'

Meanwhile, the partners are raising money for manufacturing and safety studies for their products over next two or three years prior to clinical trials.



Vivek Kumar

A CORRESPONDENT

Plant-a-Tree, a community project, was organized by the Mahatma Gandhi Memorial of North Texas in partnership with Texas Tree Foundation, the City of Irving and the Dallas-Forth Worth community.

More than 100 community volunteers, including Plant-a-Tree sponsors, University of Texas-Arlington students, and DFW community leaders participated in the event.

The event began with a ribbon-cutting ceremony, along with special guests, volunteers, DFW community leaders and five MGMNT board directors: Taiyab Kundawala, Rao Kalvala, Shabnam Modgil, John Hammond and Swati Shah.

Rao Kalvala, secretary and construction committee chair, MGMNT, in his welcome address, stated that Mahatma Gandhi was a strong supporter of environment protection and quoted Gandhi: 'The earth, the air, the land and the water are not my inheritance from our forefathers but on loan from our children. So we have to hand it over to them at least as it was handed over to us.'

Mahatma Gandhi Memorial in Dallas organizes Plant-a-Tree effort



The Plant-a-Tree project added 40 trees to the Dallas landscape.

Kalvala saluted the Texas Tree Foundation team of Janet Monear, chief executive officer; Matt Grubisich, director; Tyler Wright, urban forester, and Alan Meagher, council member from the City of Irving, for working so well with MGMNT.

Kalvala also expressed appreciation for the hard work done by Dr Prasad Thotakura, the initiator and chair of MGMNT, for his vision in making a reality of the community's dream of having a Mahatma Gandhi Memorial in the heart of the metro area.

Dr Thotakura said one of Mahatma Gandhi's key messages was to preserve the environment and plant trees, adding that Gandhi was ahead of his times and is more relevant today than in his own time.

He emphasized the foundations of society were based on Gandhian values — truth, non-violence, love, compassion and equality — and requested everyone to strive for a better society in which everyone is treated as equals and with respect.

He also expressed condolences to the victims of the Paris attacks, after which the gathering observed two minutes of silence.

The Texas Tree Foundation demonstrated the way to best plant a tree and the 100 volunteers quickly set about planting 40 Texas native trees.

COURTESY: PRASAD THOTAKURA