

# Turmeric therapy to fight malaria

## OUR SPECIAL CORRESPONDENT

**New Delhi, Dec. 17:** Indian scientists have trapped a key ingredient of the common kitchen spice turmeric in tiny spheres shaped like soap bubbles and are pitching the entrapped molecule as a potential new therapy to fight malaria.

Aparajita Ghosh at the Bose Institute, Calcutta, and her colleagues have shown that the turmeric compound called curcumin, entrapped in spheres, can improve survival in mice infected with a parasite similar to the one that causes brain inflammation in humans.

Several research groups have earlier shown that curcumin, the compound that imparts the yellow colour to turmeric, has anti-cancer, and

anti-inflammatory, and anti-infective effects against several organisms, including the malaria parasite.

But curcumin by itself is poorly absorbed by the body and not enough of it is available long enough in the bloodstream for effective therapy.

The large size of the curcumin molecule prevents it from penetrating the biological membrane called the blood-brain-barrier, a key factor to combat cerebral malaria.

Now, Ghosh and her collaborators at the Indian Institute of Science, Bangalore, and the University of Pune have trapped curcumin in tiny nanospheres, effectively shrinking its size to allow it to cross the blood-brain barrier when administered as an oral therapy.

The researchers infected laboratory mice with a parasite called *Plasmodium*

*berghei* that causes a brain inflammation in mice similar to the illness caused by *Plasmodium falciparum* in humans — and tested their “nanotised” curcumin as an oral drug.

“We see a significant increase in the time for which the nanotised curcumin is available, circulating in the bloodstream,” said Ghosh.

Natural curcumin typically circulates in the bloodstream for less than an hour before the body’s cleanup mechanisms eliminate it. The nanotised curcumin, Ghosh said, remained in the bloodstream for 48 to 72 hours.

In the laboratory experiments, about 50 per cent of the mice that received the oral nanotised curcumin survived the malaria infection, while all the mice that did not receive therapy died within eight days of the infection.