

Pills from Poisons

Take one part venom from the rough-scaled snake; mix with scientific brains from the National University of Singapore (NUS); pass through a well-oiled technology transfer office; and sprinkle liberally with entrepreneurial flair. The result? Pro-Therapeutics, a Singaporean start-up company, set up to develop novel therapeutic drug products based on peptides derived from animal toxins.

Among the products in the pipeline are a pain-killer peptide derived from king cobra venom, which has analgesic properties said to be several thousand times more potent than morphine; an anti-coagulant peptide, derived from the venom of the Australian rough-scaled snake, which prevents the formation of blood clots; and an anti-angiogenic peptide which inhibits the spread of blood vessel cells, for treatment of cancers and eye diseases.

Professor R. Manjunatha Kini, a protein chemist at the NUS Department of Biological Sciences, is the company's chief scientific officer and a co-founder. Well attuned to the value of intellectual property, he has had seven PCT applications published in the last eight years.

Professor Kini's fascination with poisonous snakes stemmed from a childhood spent in India. This was to inspire his life's work, devoted over 27 years to studying venom from some of the world's most lethal reptiles in a quest for new ways to fight human afflictions. "Snake venoms are unique cocktails of pharmacologically active proteins and peptides," Professor Kini explains. "Some of these toxins help us in deciphering the molecular mechanisms of normal physiological processes. Some can also help in developing therapeutic agents for the treatment or prevention of human diseases."

But the nature of these proteins is such that, to date, they have been limited to use in treatments delivered by injection. Now, using patented technologies licensed from the NUS, the Pro-Therapeutics team is working to re-engineer the proteins in order to produce small novel peptides that can be administered as pills. The breakthrough, when it comes, will open up a growing market for peptide therapeutics estimated in 2003 at US\$9 billion.

More information:
www.protherapeutics.com

Courtesy of Peter Mintschin, Venom Supplies Pty Ltd



A peptide derived from the venom of the king cobra may produce a pain-killer several times more potent than morphine.
