

Nano antibodies to treat diseases

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The National Research Center on Camel (NRCC), Bikaner, initiated a study to test camel immunology in collaboration with the Bhabha Atomic Research Centre, Mumbai. Since camel's immunology is unique, the antibodies produced in its blood stream are very special and are called nano antibodies, which have the potential to treat various diseases. These antibodies are also expected to be used for human disease diagnostics as well as treatment. Dr N V Patil, director, NRCC, highlighted that the institute was working with the Bhabha Atomic Research Centre to study the effectiveness of these antibodies on diseases like TB and also in the diagnosis and treatment of thyroid cancer.

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Interestingly, NRCC is also collaborating S P Medical College, Bikaner, to develop an anti-snake venom. Dr Patil said that the nano antibodies traverse through the animal and human body extremely fast to reach their target, passing internal barriers like the blood-brain barrier and placental barrier. He also pointed out that there is great prospect in this area for developing drugs for diseases of animals and human.

Indo-German disease R&D initiative

The Indian Council of Medical Research (ICMR) and Helmholtz Association of German Research Centres (HGF), Germany, have launched a fellowship under the Indo-German Science Centre for Infectious Diseases (IG-SCID) for the financial year 2011-2012. IG-SCID is a joint initiative of HGF and ICMR with the mission to strengthen Indo-German cooperation in the field of infection research. The purpose of this fellowship is to provide opportunities to Indian and German researchers to undertake research in thematic areas of infectious diseases. Six fellowships, each of a duration of three months, would be granted each year by both the Indian and the German organization. Thematic research areas of infectious diseases for training include, genetic susceptibility, viral diseases (HIV/HCV) vaccine and anti-infectives, zoonoses & animal models of

infectious diseases. The programme will enable Indian scientists to visit several German institutes such as, the Helmholtz Centre for Infection Research (HZI), Braunschweig; TWINCORE Centre for Experimental and Clinical Infection Research, Hannover; MHH Medical University, Hannover and Helmholtz Institute for Pharmaceutical Research Saarland (HIPS), Saarbrücken.

ICMR constitutes Vector Science Forum

The emerging and re-emerging vector borne diseases like dengue, chikungunya, japanese encephalitis, chandipura virus, nipah viruses, malaria, filariasis, and visceral leishmaniasis have posed a great challenge to researchers, disease control programme planners and implementers in the country. In this context, the Indian Council for Medical Research (ICMR) has now constituted a 'Vector Science Forum' in order to promote research on vectors and to develop a common platform for all vector biologists, entomologists, programme people and experts embarking upon common issues. The projects would be funded by ICMR and will involve extensive research in selective priority areas. ICMR expects the forum to help in the field of evaluation trials to evaluate new insecticides, vector control tools in different vector eco-systems and evaluation of diagnostic kits and assays for parasite detection.

Gene therapy to cure AMD

A new in vivo study by researchers at Tufts University School of Medicine revealed that a new gene therapy approach using a protein called CD59, or protectin, has a lot of potential to slow the signs of age-related macular degeneration (AMD). The team, which was led by senior author Dr Rajendra Kumar-Singh demonstrated for the first time that CD59 delivered by a gene therapy approach significantly reduced the uncontrolled blood vessel growth and cell death that is typical of AMD, which is the most common cause of blindness in the elderly. Activation of the complement system, a part of the immune system, leads to the generation of pores known as 'membrane attack complex' or MAC in cell membranes, which leads to the killing of the cells in the back of the eye and causes AMD. CD59 is known to block the formation of MAC. Using an established mouse model of AMD, they found that the eyes had 62 percent less uncontrolled blood vessel growth and 52 percent less MAC than the controls. The current standard treatment for some forms of AMD requires an injection directly into the eye approximately every four weeks. According to Dr Kumar-Singh, gene therapy approaches to treat AMD are especially attractive because they will allow patients to be treated less frequently, reducing patient discomfort and lowering chances of infection. The study received grants from The Ellison Foundation, the National Eye Institute, the National Institutes of Health, the Virginia B Smith Trust, the department of ophthalmology at TUSM, the Lions Eye Foundation and Research to Prevent Blindness.