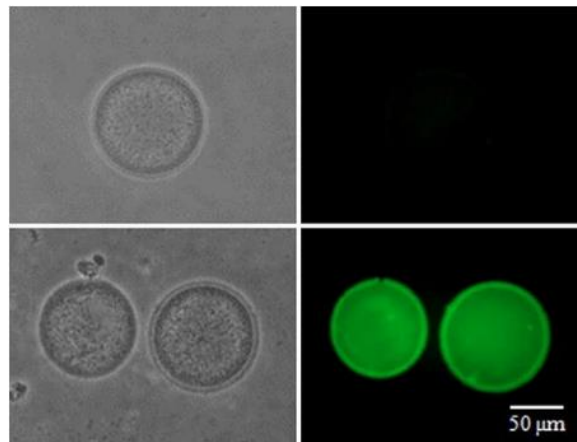


NII wins a patent on process for production of tag-free recombinant fusion protein for its use as contraceptive vaccine

The scientists at DBT-National Institute of Immunology (NII), New Delhi, contraceptive vaccine provides us a very good option, which is scientific and more humane approach as compared to other currently used methods such as shooting, trapping, spaying, etc. The NII won a patent (Patent No. 337612) which is about a cost effective protocol for production, purification and refolding of dog Zona pellucida sperm-binding protein 3 (ZP3) without any affinity tag for the development of contraceptive vaccine, aimed to manage street dog populations.



To overcome the problems existing in the prior art, the inventors have cloned and expressed in a host cell a fusion protein (TT-dZP3) encompassing a promiscuous T non B-cell epitope of tetanus toxoid (TT, aa residues 830-844) followed by two lysine residues linker and dog ZP3 (aa residues 23-348). This avoids chemical conjugation of dog ZP3 with a carrier protein. Further, the fusion recombinant protein has been expressed without His6-tag. The inventors have reported optimization of a simple process of high level expression and purification of the recombinant protein without any tag and its contraceptive potential.

Continuous increase in wildlife population has led to several problems in various parts of the world. Increasing population of elephants in Africa, wild horses in USA, Kangaroo in Australia and street dogs in India pose habitation conflicts with human populations. Further, wild animals may act as vectors or reservoirs for various diseases of zoonotic importance and may pose a major risk to the human health.

Wildlife managers have often used lethal means such as shooting, trapping and poisoning to control wildlife population. However, growing public concerns over animal welfare issues concomitant with the new legislations that forbid killing of these animals make such approaches increasingly unacceptable. Various agencies that are involved in controlling the population of the street dogs mainly use either spaying of female dogs or castration of male dogs. These measures have failed to effectively control the increase in population of street dogs. Thus, there is an urgent need to develop novel strategies for the management of street dog population.

Link: <https://pubmed.ncbi.nlm.nih.gov/23242635/>

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