

Design of canine antibodies for targeted therapeutics

Methods for generating single chain variable region Fragments (scFvs) for use as targeting agents for the treatment of infectious, inflammatory and neoplastic diseases in dogs

Inventor

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STATE OF DEVELOPMENT

- Ready for use

INTELLECTUAL PROPERTY

Issued Patent [8,722,587](#)

REFERENCE MEDIA

Braganza A., et al. [Vet Immunol Immunopathol. 2011 Jan;139\(1\):27-40](#)

DESIRED PARTNERSHIPS

- License

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Problem

Cancer is the leading cause of death in our current canine pet population. Previous studies have found that 45% of dogs aged 10 years or older and 23% of dogs of any age die from cancer. The gold standard of veterinary cancer therapy is systemic administration of chemotherapeutic agents that inhibit cell division and induce cell death. These agents are not tumor-specific and frequently cause adverse side effects which limit the dose that can be given and potentially the therapeutic efficacy.

Solution

Dr. Nicola Mason has devised a patented method to generate and isolate canine scFvs for in vivo use as immune targeted therapeutics. These therapeutics could include but are not limited to those in the immune-oncology space including bi-specific antibodies, BITEs, Chimeric Antigen Receptors for use in T cells, targeted delivery agents for toxins and chemotherapeutics. Furthermore, the technology could also be utilized to generate neutralizing antibodies for infectious diseases such as parvovirus, distemper and parainfluenza. This approach has the potential to revolutionize the \$9.7 billion canine healthcare market (Wall Street Journal) as well as promote the use of a comparative One Health approach in dogs to accelerate human drug development and inform human clinical trial design.

Applications

- Tumor associated antigen targeting (Bi-specific antibodies, BITEs etc)
- Chimeric Antigen Receptor T cells (CAR T cells)
- Targeted Drug Delivery
- Diagnostic imaging studies
- Toxin neutralization
- Bacterial and viral targeting
- Identification of allo-antigens