Monoclonal Antibodies: CCR4 Antibody for Treating Canine Lymphoma and c-KIT Monoclonal Antibodies for Detecting and Treating Canine Mast Cell Tumors

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ABSTRACT

Researchers at the University of California, Davis, have developed a monoclonal antibody for treating and diagnosing T cell lymphoma in dogs as well as monoclonal antibodies targeting c-KIT for treating and diagnosing mast cell tumors in dogs.

FULL DESCRIPTION

▶ **2023-535 CCR4 Antibody for Treating Canine Lymphoma:** Canine lymphoma is a common cancer in dogs, with an estimated incidence rate of 20 to 100 cases per 100,000 dogs. Chemotherapy is the primary treatment; a doxorubicin-based multidrug protocol is usually the standard of care. Complete remission is common in most dogs and lasts a median period of 7-10 months, resulting in a median survival of 10-14 months. Unfortunately, most lymphomas become drug-resistant, and developing treatments to reverse drug resistance or alternative treatment modalities (e.g., immunotherapy and targeted therapy) is a significant unmet need. Researchers at the University of California, Davis, are developing a new anti-cancer antibody targeting CCR4. This chemokine receptor is overexpressed in T-cell lymphomas and is responsible for growth and metastasis. The inventors have used mice to generate a dog-specific CCR4 monoclonal antibody for detecting the disease as well as treatment.

▶ **2023-536 c-KIT Monoclonal Antibodies for Detecting and Treating Canine Mast Cell Tumors:** Mast cell tumors (MCTs) occur frequently in animals, representing up to 20% of all cutaneous canine tumors usually occurring in older dogs (> 8 years). MCTs range from relatively benign to extremely aggressive, leading to metastasis and eventual death from systemic disease. Unfortunately, even with standard-of-care treatments, many dogs succumb to the disease. Researchers at the University of California, Davis, are developing a new anti-cancer antibody targeting c-KIT. c-KIT is a proto-oncogene that encodes the receptor tyrosine kinase KIT and is involved in the growth and progression of MCTs dogs. The inventors used mice to generate a dog-specific c-KIT monoclonal antibody for detecting the disease as well as treatment.

APPLICATIONS

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OTHER INFORMATION

KEYWORDS

canine cancer, veterinary care, combinational treatment, monoclonal antibody, c-KIT, diagnostics, tyrosine kinase inhibitor, CCR4

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Animal Science
- **Veterinary**
  - Companion Animal
  - Diagnostics
  - Therapeutics

- Treatment as a monotherapy or in combination with standard-of-care therapies for canine lymphoma.
- Diagnosis of canine lymphomas
- Treatment as a monotherapy or in combination with standard-of-care therapies for canine MCTs.
- Diagnosis of canine MCTs.

RELATED CASES

2023-535-0

FEATURES/BENEFITS

- A monoclonal antibody that specifically targets lymphomas expressing CCR4 to decrease growth and migration. The antibody can also be used as a diagnostic tool to determine if a dog has CCR4 lymphoma.
- A monoclonal antibody that specifically targets c-KIT to decrease the growth and migration of MCTs. The antibody can also be used as a diagnostic tool to determine if a dog has a mast cell tumor.
- Treatments in combination with standard-of-care chemotherapy may improve survival and morbidity.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- JC071c2, a Caninized Monoclonal Antibody Mutant Specific for Canine PDL1 That Could Avoid Potential Nglycosylation and W Oxidation
- Monoclonal Antibodies Specific to Canine PD-1 and PD-L1
- Monoclonal Antibodies Specific For Canine C-Kit
- Jc071c, a Caninized Monoclonal Antibody Specific for Canine Pd-L1
- JC071c1, a Caninized Monoclonal Antibody Mutant Specific for Canine PDL1 That Could Avoid Potential Nglycosylation and N-deamidation within CDR Sequences
- JC071ch, a Chimeric Monoclonal Antibody Specific for Canine PDL1
- Monoclonal Neutralizing Antibodies Specific for Canine TNF Alpha
- JC071c4, a Caninized Monoclonal Antibody Mutant Specific for Canine PDL1 That Could Avoid Potential Nglycosylation within Light Chain CDR1

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