CLAIMS

What is claimed is:

1. A method for identifying a combination of anti-cancer agents with synergistic effects comprising: (1) administering two or more anti-cancer agents to a companion animal with a spontaneously occurring cancer; (2) monitoring the companion animal for a biological and/or physiological effect; and (3), identifying a combination of anti-cancer agents with synergistic effects when the biological and/or physiological effects are synergistic, wherein the anti-cancer agents comprise bisphosphonates and cationic CpG.

~~2. The method of claim 1 wherein the anti-cancer agent is selected from the group consisting of: bisphosphonates, platinum-based chemotherapeutics, inhibitors of the protein phospholipase D, alkylating agents, antimetabolites, anthracyclines, plant alkaloids, topoisomerase inhibitors, podophyllotoxins, antibodies, tyrosine kinase inhibitors, hormone treatments, soluble receptors, and antineoplastics.~~

2~~3~~. The method of claim 1 wherein the agents are clodronate and cationic CpG.

~~4. A method for identifying a treatment modality for treatment in humans comprising testing a combination of compositions in a companion animal with a spontaneously occurring disease and identifying the combination that has a higher probability of success in humans by comparing the results of the testing in the companion animal with a spontaneously occurring disease to the results of the testing in an animal without a spontaneously occurring disease.~~

~~5. A method of identifying an autoantigen associated an autoimmune disease comprising: (a) determining one more antigens in a companion animal with a spontaneously occurring autoimmune disease; (b) obtaining an antigen profile of the disease in the companion animal; (c) comparing the profile to a control companion animal that does not have the spontaneously occurring~~

~~6. Use of one or more agents in the manufacture of a medicament for targeting multiple antigens associated with or suspected of being associated with cancer in a human, wherein said one or more agents is one that is suspected of having anti-cancer effects and where upon administration to a companion animal with a spontaneously occurring cancer, said one or more agents is determined to have an anti-cancer effect in the companion animal by monitoring a biological or physiological effect of the agent in the companion animal and identifying one or more antigens in the companion animal for which the agent had a biological or physiological effect.~~

~~7. Use of one or more agents in the manufacture of a medicament for targeting multiple antigens associated with or suspected of being associated with an infectious disease in a human, wherein said one or more agents is one that is suspected of having effects against the infectious disease and where upon administration to a companion animal with a spontaneously occurring infectious disease, said one or more agents is determined to have a beneficial effect in the companion animal by monitoring a biological or physiological effect of the agent in the companion animal and identifying one or more antigens in the companion animal for which the agent had a biological or physiological effect.~~

~~8. The use of claim 7 wherein the infectious disease is selected from the group consisting of influenza, septicemia (e.g., *Klebsiella pneumoniae* septicemia), bacterial infections (e.g., *Staphylococcus aureus*, other Staph infections, E. coli and enterococci), Pseudomonas aeruginosa, Leishmania infantum, Brucellosis, Coccidiosis, and *Salmonella enterica* Serovar Typhimurium.~~

3~~9~~. The method of any one of claims 1 or 2~~4-5, or the use of claim 6 or 7,~~ wherein the companion animal is a dog.

4~~10~~. The method ~~or use of~~ claim 3~~9~~ wherein the companion animal is a purebred dog.

511. The method ~~or use~~ of claim 39 wherein the companion animal is a mongrel dog.

612. The method ~~or use~~ of claim 39 wherein the dog has a homogeneous genetic background.

713. The method ~~or use~~ of claim 39 wherein the dog has a heterogeneous genetic background.

814. The method of any one of claims 1 or 2~~4-5, or the use of claim 6 or 7~~ wherein the companion animal is a cat.