Compounds and Methods to Treat Metastatic Cancer and Other Diseases Characterized by Increased CXCR4 (10035)

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Technology description

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UofL researchers have identified and developed inhibitor compounds and methods for the treatment of diseases characterized by increases levels of CXCR4 on the surface of cells. Such diseases include several types of cancers, HIV infection, coronary artery disease in type II diabetes, etc. UofL studies indicate that the anti-cancer effects result from the inhibition of chemotaxis of CXCR4-expressing cells or the inhibition of intracellular calcium mobilization. In a preclinical, in vivo model, the lead compound effectively reduces the size and number of tumors as well as prevents tumor migration to non-malignant sites. The UofL researchers are currently creating analogs and derivatives of the lead compound that should be novel compositions with increased therapeutic activities. The therapeutic could be administered to animals by any number of administration routes or formulations. It can be administered in combination with one or more other therapeutic agents for a disease, condition or disorder. This composition can be formulated to be released immediately upon administration or at a predetermined time after administration.

Markets Addressed

The University of Louisville is seeking a business partner interested in commercializing a novel composition capable of preventing or treating diseases involving elevated levels of CXCR4. CXCR4 expression is low or absent in healthy tissues, but its expression levels are elevated in several cancers. Its expression is known to play a role in angiogenesis and metastasis in tumors. CXCR4 levels are elevated in other types of diseases such as systemic lupus erythematosus and certain types of coronary artery disease as well as in viral infections including HIV and Epstein Barr Virus. UofL studies have shown that administration of the lead compounds resulted in a decrease in tumor size and number as well as a reduction in angiogenesis or metastasis.

There are advantages to these compounds and methods. The therapeutic composition could be used to prevent or treat a wide number of diseases which involve an elevation in the levels of CXCR4. Furthermore, the compounds could be developed for both veterinary and human patient use.

Application area

These compounds and methods target CXCR4 which has a connection with increased tumor aggressiveness and mortality.
The therapeutic could be administered to animals by any number of routes or formulations.
This composition can be formulated to be released immediately upon administration or at a predetermined time after administration.
All commercial fields

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