

PRESS RELEASE

Collectis announces the issuance by the USPTO of a patent covering a seminal nuclease-based “gene editing” method

Paris, January the 6th, 2015 – Collectis (Euronext PA:ALCLS) announces the issuance by the USPTO of US patent 8,921,332 covering chimeric endonucleases for chromosomal gene editing by homologous recombination in cells.

On December the 30th, 2014, the USPTO issued a patent to Institut Pasteur and the Boston Children’s Hospital for a method of nuclease-based chromosomal gene editing in cells *in vitro*.

This issued patent, filed on February 2000, is part of a patent portfolio owned by Boston Children’s Hospital and Institut Pasteur and licensed exclusively to Collectis pursuant to a license agreement dated June 2000.

This new patent complements Collectis’ large portfolio of gene editing technologies implemented in its CAR T-cells and gene therapy programs to treat unmet medical needs, as well as within its Minnesota-based agricultural biotechnology subsidiary, Collectis plant sciences, developing food products with healthier characteristics.

The inventors of this patent are Dr. André Choulika, Chairman and Chief Executive Officer of Collectis, one of the pioneers in the development of nuclease-based genome engineering technology, and Professor Richard C. Mulligan, the Mallinckrodt Professor of Genetics, Emeritus, at Harvard Medical School, a Founding Partner of Sarissa Capital Management, and a former member of Collectis’ Board of Directors. Professor Mulligan is a world-renowned scientist whose laboratory has made seminal contributions to the development of fundamental gene transfer and gene therapy technology.

This patent, US 8,921,332, covers “the use of a chimeric endonuclease to induce homologous recombination between a nucleic acid vector and the chromosomal DNA of the cell *in vitro* to modify a specific sequence”. This seminal invention is at the origin of most current nuclease-based precise gene editing technologies involving Zinc Finger Nucleases, TALEN[™], Mega-TALE, BurrH Nucleases, as well as CRISPR, which all are chimeric endonucleases comprising a DNA binding sequence and a DNA cleavage domain with a recognition site of at least 12 base pairs (bp).

Claim 1 of the 55 claims of the patent covers:

“A method of modifying a specific sequence in chromosomal DNA of a cell *in vitro* comprising: inducing in the cell double stranded cleavage of chromosomal DNA at a genomic site of interest in the specific sequence to be modified, wherein the inducing comprises contacting the genomic site of interest with a chimeric restriction endonuclease, said chimeric restriction endonuclease comprising a DNA binding sequence and a DNA cleavage domain, and said restriction endonuclease recognizing a DNA sequence of at least 12 bp, wherein said restriction endonuclease is introduced as a protein or is encoded by a nucleic acid vector that is expressed;



and contacting said cell with a targeting DNA or a nucleic acid vector encoding said targeting DNA in an amount sufficient to produce recombination between said targeting DNA and said chromosomal DNA at the site of interest, wherein said targeting DNA comprises (1) DNA homologous to the region surrounding the genomic site of interest and (2) DNA which modifies the specific sequence upon recombination between said targeting DNA and said chromosomal DNA, thereby modifying the specific sequence in the chromosomal DNA of the cell.”

About Collectis

Collectis is a biopharmaceutical company focused on developing immunotherapies based on gene edited engineered CAR T-cells (UCART). The company’s mission is to develop a new generation of cancer therapies based on engineered T-cells. Collectis capitalizes on its 15 years of expertise in genome engineering - based on its flagship TALEN™ products and meganucleases and pioneering electroporation PulseAgile technology - to create a new generation of immunotherapies for treating leukemias and solid tumors. Collectis’ adoptive cancer immunotherapy for chronic and acute leukemias is based on allogeneic T-cell chimeric antigen receptor (CAR) technology. CAR technologies are designed to target surface antigens expressed on cells. Using its life-science-focused, pioneering genome-engineering technologies, Collectis’ goal is to create innovative products in multiple fields and with various target markets. Collectis is listed on the NYSE Alternext market (ticker: ALCLS). To find out more about us, visit our website: www.collectis.com.

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