

Melatonin-Based Treatment and Diagnosis of Bile Duct Disease

Summary

Disease of the biliary tract is a common cause of morbidity and mortality in the United States. Improved methods for bile duct disease, diagnosis, and treatment are needed. This invention pertains to methods for the diagnosis and treatment of biliary tract disease, such as cholangiocarcinoma, using melatonin and melatonin signaling modulators.

Key Investigator

Gianfranco Alpini, PhD

Field

Hepatology, Oncology

Technology

Melatonin-Based Treatment and Diagnosis of Bile Duct Disease

Key Features

- Provides opportunity for early disease detection
- Safe alternative to current treatment options

Stage of Development

Preclinical

Status

Available for Licensing

Patent Status

US Patent 9,468,670

Contact

Megan White
BD Analyst
(254) 771-4846
Megan.White@BSWHealth.org

Market

Biliary tract diseases are often a result of proliferation of cholangiocytes. Malignant transformation of the cholangiocytes can result in cholangiocarcinoma (CCA), bile duct cancer. In the U.S. there are approximately 3000 new cases of cholangiocarcinoma per year.

Many liver diseases are clinically silent and cancerous disease of this kind cannot be seen or felt during routine physical exams making it difficult to diagnose in the early stages when treatment is most successful. Current diagnosis relies on examination of tumor tissue, which may be inconvenient for early detection.

Although advancements have been made in understanding factors that modulate biliary mucosa growth and development of cholangiocarcinoma, viable therapies for the management of cholangiocarcinoma remain elusive.

Technology

This technology consists of novel methods for the treatment and detection of biliary tract disease. The methods of treatment involve administration of a melatonin signaling modulator and in some cases with gene therapy, cell therapy, and/or anti-tumor therapy.

In-vivo studies have been conducted in BDL rats and mice. Furthermore, additional work has been performed on tissue from CCA patients as well as CCA cell lines.

This invention also provides novel procedures for measuring melatonin in subjects for early detection of disease.

Currently, in-vivo studies are being conducted to test inhibitor of melatonin signaling pathways at Baylor Scott & White's Digestive Disease Research Center.