

Applications

- Inflammatory mediated disorders
- Autoimmune induced inflammation
- Gout
- Rheumatoid Arthritis
- Alzheimer's disease
- Multiple sclerosis
- Inflammatory bowel disease

Advantages

- Novel therapy to reduce inflammation
- Novel mechanism of action
- Treats underlying pathogenesis

Inventors

[Shijun Zhang, Ph.D.](#)
[Xiang-Yang Wang, Ph.D.](#)

Contact

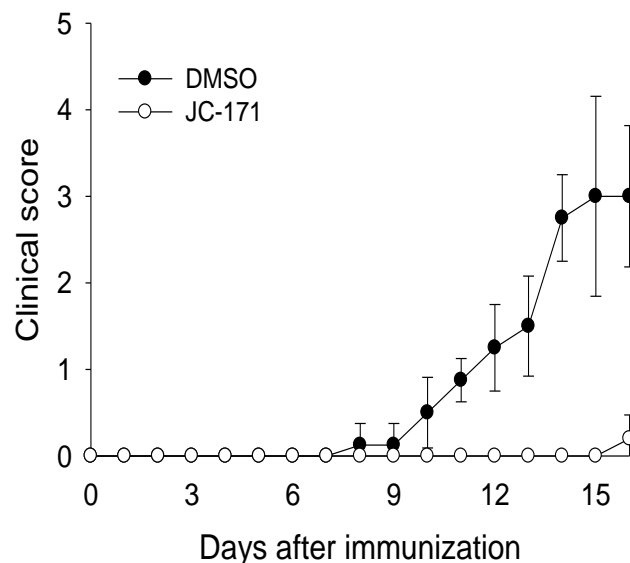
Magdalena K. Morgan, Ph.D.
Technology Manager
mkmorgan@vcu.edu
Direct 804-827-6095

Market Need

Non-steroid anti-inflammatory drugs (NSAIDs) are the most commonly used drugs to treat inflammatory mediated diseases. However, prolonged use of NSAIDs can produce side effects including ulcers, bleeding and damage to gastric mucosa. Alternative therapies to treat inflammatory mediated disorders are greatly needed.

Technology Summary

Dr. Shijun Zhang has designed and synthesized a family of novel compounds with the potential for treating and/or preventing inflammatory mediated disease. These compounds were developed to specifically inhibit the (NLRP3) inflammasome and target the underlying pathogenesis, and offer a potential alternative to traditional anti-inflammatory drugs (NSAIDs) which have many known side effects (ulcers, bleeding, damaged gastric mucosa). Recent studies indicate a critical role of NLRP3 inflammasomes in the generation of various inflammatory mediators, and in the pathogenesis of several human diseases including multiple sclerosis, Alzheimer's disease, and atherosclerosis. Dr. Zhang discovered that these novel compounds reduce the production of inflammatory mediator (i.e. IL- β) and produce resistance to autoimmune encephalomyelitis (EAE), which is a mouse model that mimics human multiple sclerosis. Taken together, Dr. Zhang has a novel approach to inhibit the production of inflammatory mediators, and prevent the side effects associated with NSAIDs.



JC-171 treatment targeting NLRP3 inflammasome inhibits disease progression of experimental autoimmune encephalomyelitis

Technology Status

In vitro and *in vivo* data available

Patent pending: U.S. and foreign rights available

This technology is available for licensing to industry for further development and commercialization.