

## JAK-I-599 for the Treatment of Inflammatory Bowel Disease

### Overview

<b>Drug Name</b>	JAK-I-599
<b>Description</b>	JAK-I-599 is a JAK1 inhibitor in clinical development for the oral treatment of inflammatory bowel disease.
<b>Target</b>	Janus Kinase 1
<b>Drug Modality</b>	Small Molecule
<b>Indication</b>	Inflammatory Bowel Disease
<b>Product Category</b>	Treatment of Inflammation
<b>Mechanism of Action</b>	Signal Transduction Modulators
<b>Status</b>	Clinical Trial
<b>Patent</b>	Granted

### Seeking Global Cooperation

Protheragen Inc. is actively seeking partnership for JAK-I-599. Potential collaboration can be strategic alliance, licensing, or marketing agreement.

We look forward to hearing from you.

### Target

#### Janus Kinase 1 (JAK1)

This gene encodes a membrane protein that is a member of a class of protein-tyrosine kinases (PTK) characterized by the presence of a second phosphotransferase-related domain immediately N-terminal to the PTK domain. The encoded kinase phosphorylates STAT proteins (signal transducers and activators of transcription) and plays a key role in interferon-alpha/beta, interferon-gamma, and cytokine signal transduction. This gene plays a crucial role in effecting the expression of genes that mediate inflammation, epithelial

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remodeling, and metastatic cancer progression. This gene is a key component of the interleukin-6 (IL-6)/JAK1/STAT3 immune and inflammation response and is a therapeutic target for alleviating cytokine storms. The kinase activity of this gene is directly inhibited by the suppressor of cytokine signalling 1 (SOCS1) protein.

## Indication

### Inflammatory Bowel Disease

Inflammatory bowel disease (IBD) is a syndrome of chronic, immunologically mediated inflammatory disorders of the gastrointestinal tract in which tissue damage and inflammation lead to long-term, often irreversible, impairment of the structure and function of the gastrointestinal tract. IBD is classified into Crohn's disease, ulcerative colitis and indeterminate colitis according to diagnosis.

In the Global Burden of Disease study, more than 10.5 million prevalent cases of IBD were registered worldwide in 2013. IBD is associated with an increased risk of gastrointestinal cancers. The type of cancer and level of risk vary with the type of IBD as well as extent and location of disease; malignancies tend to develop in tissues that are exposed to prolonged inflammation.

Treatment of IBD typically centers on drug therapy. Probiotics, diet and other lifestyle modifications are also important aspects of patient management. Surgery may be required in patients with a complicated disease or who do not respond to drug therapy.

## Mechanism of Action

### Signal Transduction Modulators

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**Molecular Mechanism**    Inhibiting Jak1

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## Status

### The Status of JAK-I-599

The international patent applications under the PCT have been granted.

