Novel Combination Therapy to Treat Neutropenia

The combination of RAR agonist Am80 and G-CSF will provide therapeutic benefit to patients suffering from neutropenia beyond G-CSF alone.

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IP Status

Patented

Seeking

Licensing, Development partner
Background

For over 20 years, G-CSF has been an effective treatment for increasing numbers of neutrophils and white blood cell count. However, despite this therapy, chemotherapy induced neutropenia continues to be a problem with infections, febrile neutropenia and associated deaths.

Tech Overview

The combination of Am80 (Tamibarotene) and G-CSF will provide therapeutic benefit to patients suffering from neutropenia beyond G-CSF alone. Am80, an oral retinoic acid derivative, promotes neutrophil maturation significantly better than G-CSF and effectively differentiates a G-CSF-induced immature granulocytes into mature neutrophils. Unlike G-CSF, Am80 promotes the production of differentiated neutrophils that closely mimic fully mature neutrophils. Am80-induced neutrophils exhibit cellular morphology and functional reactive oxygen species (ROS) production characteristic of mature neutrophils. Together, Am80 and G-CSF work synergistically to provide sufficient numbers of mature neutrophils to combat infection and promote survival.

Further Details

- **Blood. 2013 Feb 7;121(6):996-1007** Retinoid agonist Am80-enhanced neutrophil bactericidal activity arising from granulopoiesis in vitro and in a neutropenic mouse model
- **Pharmacology & Therapeutics** Available online 27 August 2019, Strategies to generate functionally normal neutrophils to reduce infection and infection-related mortality in cancer chemotherapy

Benefits

- Drug repurposing allows shortened development timeline, API and Drug Master File available
- Shortened duration of cancer chemotherapy induced neutropenia (CCIN)
- Lowers risk of both fungal and bacterial infection in patients suffering from CCIN

Applications

- Am80 used in combination with G-CSF biosimilar for CCIN serves to differentiate from other G-CSF biosimilars on the market
Breast cancer and AML patients with CCIN identified as target patient populations for clinical proof of concept

Opportunity

Looking for a licensee and development partner, preferably with an approved biosimilar G-CSF or one in clinical development.

Patents

- PCT/US13/44828 / Methods for Treating Neutropenia Using Retinoid Agonists
- PCT/US15/16447 / Compositions and Methods for Treating Neutropenia