



Increasing Red Blood Cell Production

[View U.S. Patent No. 9,512,430 in PDF format.](#)

WARF: P130326US02

Inventors: Emery Bresnick, Yoon A Kang, Skye McIver

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method to enhance erythropoiesis in individuals with anemia, sickle cell disease, hemophilia or other disorders marked by diminished red blood cells

Overview

Maintaining an adequate supply of oxygen to tissue is necessary for survival. The oxygen-carrying capacity of blood is governed by the concentration of red blood cells (erythrocytes). It is critical that red blood cell production (erythropoiesis) is properly regulated.

A drop in red blood cells due to age, infection, cancer or other condition can cause anemia. Anemia currently is treated with a hormone called Epo and its pharmaceutical derivatives. However, many kinds of anemia are Epo-insensitive. Moreover, treatment with Epo can cause dangerous side effects such as stroke.

Clearly needed is a new method for stimulating red blood cell production.

The Invention

UW-Madison researchers have developed a method for increasing the production of red blood cells by knocking down certain components of the exosome (a protein complex inside cells that degrades RNA). Specifically, the new method uses an siRNA, ribozyme or other inhibitory nucleic acid molecule to decrease the expression of *Exosc8*, *Exosc9*, *Dis3*, *Dis3L* or *Exosc10*.

Knocking down these exosome components boosts genes and proteins that promote red blood cell development.

Applications

- New therapeutics for anemia, hemophilia, thalassemia, sickle cell disease, bone marrow transplantation, hematopoietic stem cell transplantation, thrombocytopenia, pancytopenia or hypoxia

Key Benefits

- New strategy to encourage red blood cell production
- Potential alternative for treating Epo-insensitive anemia
- No known deleterious effects on cell function

Stage of Development

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

Additional Information

OK



WARF
Wisconsin Alumni Research Foundation

| info@warf.org | 608.960.9850

For More Information About the Inventors

- [Emery Bresnick](#)

Related Intellectual Property

- [View Divisional Patent in PDF format.](#)
- [View Divisional Patent in PDF format.](#)

Tech Fields

- [Drug Discovery & Development : Other drug discovery & development](#)
- [Therapeutics & Vaccines : Oncology](#)

For current licensing status, please contact Andy DeTienne at adetienne@warf.org or 608-960-9857

We use cookies on this site to enhance your experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

OK



WARF
Wisconsin Alumni Research Foundation

| info@warf.org | 608.960.9850