Ugandan biotech unveils sickle cell cure millions can afford

A Ugandan biotech breakthrough promises to slash the cost of sickle cell gene therapy- and change global medicine.

OUR REPORTER

At the weekend in Kampala, a piece of news landed that could reshape the future of one of the world's most neglected diseases.

The United States Patent and Trademark Office (USPTO) had accepted a groundbreaking patent from Dei BioPharma Ltd, a Ugandan biotechnology company led by scientist Dr Matthias Magoola. The innovation, approved on January 26, 2026, offers a radically different approach to treating sickle cell disease—one designed not only to cure the illness, but to make that cure affordable and accessible to the millions who need it most.

For patients with sickle cell disease, particularly in sub-Saharan Africa where the condition is most common, that promise has long felt out of reach.

Sickle cell disease is an inherited blood disorder that causes red blood cells to become rigid and crescent-shaped. These distorted cells block blood flow, triggering severe pain, infections, organ damage and, too often, shortened lives. An estimated 20 million people worldwide live with the condition, the majority of them in low- and middle-income countries.

In recent years, scientists have shown that sickle cell can be cured through gene therapy. But those treatments - often costing millions of dollars per patient-require highly specialised laboratories, personalised genetic engineering and advanced hospitals. For most families and public health systems, they remain a distant dream.

Dr Magoola believes it does not have to be that way.

"This invention was designed from the beginning to solve not only the biology of sickle cell disease, but also the access problem," he said.

TURNING BACK THE GENETIC CLOCK

The science behind the breakthrough is rooted in something all humans share.

Before birth-and for several months afterward-babies produce a form of oxygen-carrying protein called fetal h...

Dr Matthias Magoola (2nd L) with president Museveni inspecting the Dei BioPharma factory

> By targeting a universal genetic switch rather than the sickle mutation itself, we can develop a single, standardised treatment that works for all patients," Dr Magoola explained.

haemoglobin does not cause red blood cells to sickle. It is only when the body naturally switches to adult haemoglobin, usually around six months of age, that symptoms of sickle cell disease begin to appear.

Rather than trying to repair the defective ge...

aims to stop that switch from ever happening.

Using CRISPR gene-editing technology, the company targets what Dr Magoola describes as a universal genetic "control switch"—a piece of genetic code that tells the body when to stop producing fetal haemoglobin and start making the adult form. By disabling this switch, the body continues producing fetal haemoglobin, preventing red blood cells from becoming rigid and misshapen.

Crucially, this control switch is the same in all humans.

"By targeting a universal genetic switch rather than the sickle mutation itself, we can develop a single, standardised treatment that works for all patients."