

# CREATION & growth

## A South African breakthrough

The medicinal properties of fulvic acid are well known. However, environmental sources of this health-giving substance are often contaminated with harmful heavy metals. Now, thanks to a THRIP-funded project at the University of Pretoria, there is an alternative.

In just four years, collaboration between the University of Pretoria and the private sector has seen the efforts of a small research team grow into the basis for the development of a large pharmaceutical factory devoted to the production of a novel carbohydrate-derived fulvic acid.

Not only has this project successfully determined the safety and medicinal properties of the substance, known as CHD-FA, but it has also resulted in a commercially available product that is being sold in complementary medicines, food supplements and cosmetics

worldwide, including some 300 stores in the European Union.

Project leader Professor Connie Medlen explains that this form of fulvic acid represents a completely new technology and a unique production process – now protected by international patents.

“No other facility produces heavy metal-free fulvic acid from a carbohydrate source,” she says. “Anecdotally the health of people suffering from illnesses such as diabetes, HIV/AIDS and skin conditions has improved by using this product.”

Professor Medlen points out that the most important focus of the research project was to verify the safety and efficacy of CHD-FA. This was done through a number of *in vitro* and *in vivo* studies. Subsequent to this, a phase one clinical safety trial was introduced, which showed a marked decrease in the extent of allergic reactions with no side effects.

“Not only was CHD-FA proven to have anti-inflammatory properties, but it also has specific anti-allergenic properties,” she says.

## in perspective:

Fulvic acid is a naturally occurring substance known to have anti-bacterial, anti-fungal, anti-viral and anti-inflammatory properties. Besides being a powerful antioxidant, it also makes nutrients absorbable, which means it could have a dramatic impact on all kinds of diseases and health problems.

However, until recently, the only source of fulvic acid was from our increasingly polluted environment. Laboratory analyses of fulvic acid have uncovered high levels of metals such as aluminium, arsenic and lead, as well as pesticide and herbicide residues. This contamination is one of the main factors preventing the use of fulvic acid as an ingredient in human and animal products.

Fortunately, following THRIP-funded research, a form of fulvic acid is now being produced from a carbohydrate source in a state-of-the-art manufacturing facility near Pretoria. It is free of contaminants, stable, uniform and safe for cosmetic, pharmaceutical and nutritional use.



Team member  
Ike Ortell.

*THRIP funds helped to get the testing programme underway, which in turn created the thriving factory we have today, with large international role-players expressing an interest.*

*– Stefan Coetzee, Fulvimed SA, industry partner*

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“With THRIP’s financial assistance, the product was launched from the test-tube phase to partial human testing.”

The project has also led to more and more research work being conducted locally and internationally – clinical trials underway include an eczema and herpes trial, with plans to conduct further HIV/AIDS research as well as diabetes research in collaboration with the Medical Research Council.

Stefan Coetzee, from industry partner Fulvimed SA, says that the project’s biggest challenge was “a race against time”.

“A project of this magnitude must be backed by patents, but also has to start becoming profitable,” he says. “So testing was done under pressure at all stages. Students with potential were identified to receive bursaries and complete the work as soon as possible. This enabled us to submit patents as well as commence trading.”

At least nine postgraduate students

were enrolled during the course of the study, of which four were black females. Several research papers have already been submitted for consideration in peer-reviewed journals.

“The University of Pretoria’s safety and efficacy trials created the necessary footprint and information for further resources being made available by the private sector, allowing international testing to commence,” says Coetzee. “It also enabled us to take CHD-FA successfully to market, both nationally and internationally. This was particularly important as we had no other products on the market and therefore did not have the financial resources to cover the cost of the pre-clinical and clinical trials.”

Professor Medlen agrees that the research has enabled South Africa to become a leader in safe medicinal applications of fulvic acid, while ensuring that the product is affordable and available to the majority of people living in Africa.



Team member  
Mtemba  
Qwaba.

## FAST FACTS

A multi-level marketing company is now selling CHD-FA through thousands of members countrywide, helping to create small businesses across South Africa.

CHD-FA is also being used for self-medication as a wellness drink, fuelling a more productive workforce.

Industry partner Fulvimed SA (Pty) Ltd, which holds the worldwide production rights, has grown considerably thanks to this research, extending its business into Africa and onto the international market. The majority of staff members are from previously disadvantaged communities.

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