Plant compounds from South African daffodils show promise for depression (Medical news, Jun 2012)

Scientists at the University of Copenhagen have previously documented that substances from the South African plant species Crinum and Cyrtanthus - akin to snowdrops and daffodils - have an effect on the mechanisms in the brain that are involved in depression. This research has now yielded further results...Read more

Neighbouring cells help cancers dodge drugs (Nature, Jul 2012)

Cancers can resist destruction by drugs with the help of proteins recruited from surrounding tissues, find two studies published by Nature today. The presence of these cancer-assisting proteins in the stromal tissue that surrounds solid tumours could help to explain why targeted drug therapies rapidly lose their potency...Read more

Synthesizing success: Florida A&M professor develops drug from plant in native Ghana (Tallahassee.com, Jul 2012)

College of Pharmacy and Pharmaceutical Sciences’ Seth Ablordeppey is a man on multiple missions. Working with the compounds in a plant found in his native Ghana, Ablordeppey (pronounced Ablo-de-pea) recently developed a synthetic drug that has the potential to replace current prescriptions being used to help people with compromised immune systems...Read more

Forthcoming Books

Adopted from Taylor & Francis

**Phytochemicals Health promotion and therapeutic potential**

An examination of foods, botanicals, and phytochemicals as they relate to the prevention of age-related chronic diseases, this book discusses herbs and spices in cancer prevention; wine, phenolics, and cancer; anthocyanins in cardiovascular health; anti-inflammatories; skin photoprotection; beny phytochemicals; green tea catechins; and cognitive function in the elderly. The book begins with an overview of phytoneutrients in human health and disease, and covers chronic disease prevention, bone and joint health, skin health, obesity and metabolism, and brain health. The final chapter describes an analytical technique 'proving very powerful in phytoneutrient research in humans.'
Profile on Dr John Becker (ACGT Manager)

Dr Becker holds an undergraduate degree in Biological Sciences and an Honours, Masters and PhD in Wine Biotechnology from the University of Stellenbosch. Following his studies, Dr Becker completed a post-doctoral research fellowship at the CSIR after which he was employed as a senior researcher, in the CSIR Systems Biology platform. His work included studies on plant-pathogen interactions, yeast metabolic engineering, functional genomics and anti-malarial drug discovery.

In addition to obtaining his PhD in Wine Biotechnology, Dr Becker had also completed a Management Development Programme at the University of Stellenbosch’s Graduate School of Business. Accordingly his background in genomics research and management made him an ideal candidate for the ACGT position.

As of January 2011, Dr John Becker was appointed the Centre Manager of the African Centre for Gene Technologies (ACGT), a collaborative initiative that involves the Agricultural Research Council (ARC), the CSIR, and the Universities of Johannesburg, Pretoria, and Witwatersrand. The ACGT is a collaborative network of excellence with the vision to position the partner organizations to be globally competitive in advanced biotechnology. It also supports the development of advanced biotechnology research for the benefit of South Africa and Africa in key areas including agriculture, health, environment, and new technology development.

As the manager of the ACGT, Dr Becker is expected to manage an institutional network of excellence in biotechnology. His responsibilities include fundraising for large collaborative biotechnology projects benefiting the ACGT partner institutions, networking with appropriate local and international researchers and capacity building in the partnership. The main areas of interest currently include agricultural biotechnology and human health-related research.

Another responsibility of the ACGT manager is the coordination of the South African partners of the SABINA network, a natural products network established as a collaborative initiative amongst South Africa, Namibia, Tanzania and Malawi. In addition, he is also the project leader of the POL-SABINA project; created to develop the policy and support actions for the SABINA project. Furthermore, Dr Becker has been appointed as an extraordinary lecturer at the University of Pretoria where he has the opportunity to interact with and mentor biotechnology post-graduate students. He is also a member of the Generation Challenge Programme Consortium Committee (GCP CC).

According to Dr Becker, the highlights of being the ACGT manager include the opportunity to travel both locally and internationally and meeting people from all walks of life who are also passionate about science. In addition he is given the chance to meet the students in the respective networks and appreciate the work being done. One of the greatest challenges he faces is getting the people from the individual networks to collaborate and share resources, but he is positive that over time this will no longer be a concern.

Dr Becker speaks very highly of his colleagues at the ACGT and he feels privileged to be working with such a creative and dedicated team. He has great passion for the growth and expansion of the ACGT as well as the networks it supports and he hopes to see many more collaborations in the future.
A photoactive manganese nitrosyl, namely \([\text{Mn(PaPy3)(NO)}](\text{ClO4})\) (\([\text{Mn-NO}]\)), has been loaded into the columnar pores of an MCM-41 host. Strong interaction between the polar nitrosyl and the \(-\text{OH}\) groups on the host wall leads to excellent entrapment of the NO donor within the porous host. With the aluminosilicate-based host (Al-MCM-41), the loading is further enhanced due to electrostatic interaction of the cationic species with the aluminum sites. The extent of loading has been determined via analytical techniques including N2 adsorption/desorption isometry. Powder X-ray diffraction studies on the loaded materials afford patterns typical of an ordered mesoporous silicate consisting of a hexagonal array of unidimensional channels (with slight loss of crystallinity).

Anticancer potential of Aloes: antioxidant, antiproliferative, and immunostimulatory attributes.

Harlev, E, Nevo, E, Lansky, E, Ofir, R, & Bishayee, A 2012, Planta Medica, 78, 9, pp. 843-852 (Link to Article)

Aloe is a genus of medicinal plants with a notable history of medical use. Basic research over the past couple of decades has begun to reveal the extent of Aloe's pharmaceutical potential, particularly against neoplastic disease. This review looks at Aloe, both the genus and the folk medicine often being called informally "aloes", and delineates their chemistry and anticancer pharmacognosy. Structures of key compounds are provided, and their pharmacological activities reviewed. Particular attention is given to their free radical scavenging, antiproliferative, and immunostimulatory properties. This review highlights major research directions on aloes, reflecting the enormous potential of natural sources, and of the genus Aloe in particular, in preventing and treating cancer.

Antimalarial efficacy of a quantified extract of Nauclea pobeguinii stem bark in human adult volunteers with diagnosed uncomplicated falciparum malaria. Part 1: A clinical phase IIA trial


According to the promising results of the Phase I and Phase IIA clinical trials with the herbal medicinal product PR 259 CT1 consisting of an 80 % ethanolic extract of the stem bark of Nauclea pobeguinii containing 5.6 % strictosamide, a Phase IIB study was conducted as a single blind prospective trial in 65 patients with proven Plasmodium falciparum malaria to evaluate the effectiveness and safety of this herbal drug. The study was carried out simultaneously using an artesunate-amodiaquine combination (Coarsucam®) as a positive control. This combination is the standard first-line treatment for uncomplicated malaria recommended by the National Programme of Malaria Control in the Democratic Republic of Congo (DR Congo).

Orthoquinone and naphthalenone derivatives from Berrya ammonilla and their anti-inflammatory activity.


A new orthoquinone, berrymonne A (1), and four new naphthalenone derivatives, berrymonne B (2), berrymonne C (3), 6-O-methylberrymonne C (4), and 4-O-methylberrymonne C (5), have been isolated from the stem of Berrya ammonilla, together with eleven known compounds (6-16). The structures of these new compounds were determined through spectroscopic and MS analyses. Among the isolates, compounds1-3, 5, (+)-pinoresinol (6), and betulinic acid (12) exhibited inhibition (IC50 = 4.41 µM) of superoxide anion generation by human neutrophils in response to formyl-L- methionyl-L-leucyl-L-phenylalanine/cytochalasin B (fMLP/CB). Compounds 1, 2, and 5 also inhibited fMLP/CB-induced elastase release with IC50 values = 3.95 µM.