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Potential of natural biflavanones from traditional medicinal plants as novel drugs leads: *Garcinia buchananii* stem bark extract and derivative 3, 8''-linked biflavanones

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Medicinal plants have served as the mainstay of traditional medicine for numerous centuries, and are a rich source of modern/western medicine. However, herbal extracts and refined preparations have limited use in modern medicine due to lack of knowledge about bioactive molecules, mechanisms of action, effectiveness, quality, bioavailability, safety, availability, preservation and regulatory policies. Nonetheless, herbal therapy is still extensively used in developing countries, and is likely to increase in developed countries. Extracts and refined preparations from *Garcinia* trees are widely used to treat numerous illnesses globally. In Africa, *Garcinia buchananii* stem bark extracts (GBB) are ingested to chronic diarrhea, dysentery, abdominal pain, inflammation and diabetes. We are investigating GBB to define the active compounds, their mechanisms of action, bioavailability, effectiveness and safety. Our findings support indigenous knowledge that GBB is antinociceptive and antidiarrheal remedy. Furthermore, like opiates, GBB acts by inhibiting neurotransmission in the gut, and appears to have similar efficacy as loperamide suggesting it is effective in shorten the duration of diarrhea. GBB can be refined into biflavanones-rich fractions that retain properties of GBB. Research shows that flavanones are abundant in herbal extracts used to mitigate diarrheal illnesses and accompanying pain, and chronic illnesses. Collectively, our research findings and those of other investigators highlight the therapeutic potential of biflavanones, and suggest that flavanones are promising leads for the development of novel therapies. Also, our findings demonstrate the unmet challenges for utilizing herbal extracts, fractions and pure molecules to improve human and animal health, and the need for multidisciplinary, team-based approach to break these barriers.

Biography

Onesmo B Balemba research focuses on the pathophysiology of diseases that affect gastrointestinal (GI) functions. His aim is to gain a better understanding of neuromuscular and immune system host responses in diabetes, and infectious diarrhea, and therapeutic strategies for these conditions. He works at Department of Biological Sciences, University of Idaho, Moscow, USA.

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