

Abstract (600 word limits)**The potential use anacardic acid in the synthesis of the 1,4-Dihydroxy anthraquinone****Lydia Kisula**

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Anthraquinone moiety is an important constituent of the largest group numerous naturally occurring quinones (Roy et.al 2016). Anthraquinones have long been used as an active ingredient in most of the traditional Chinese herb medicine (Tatyana 2009 and Chu et.al 2012). Due to their broad diversity and numerous applications both in the pharmaceutical industry and dye industry these compounds have raised interest in chemists.

Anthraquinones are most famous in cancer chemo-therapy for example anthracyclines such as doxorubicin and daunomycin (fig 1) are used for treatment of various human cancers (Zhao et.al 2015).

The presence of the 1,4-dihydroxyanthraquinone is the predominant feature of the anthracyclines. This feature has caused in recent days, the 1,4-dihydroxyanthraquinone to be employed as a synthon for the construction of other compounds with improved anticancer efficacy (Liu et. al 2019 and Zhao et.al 2013).

On the other hand the cashew nut shells are the agro-wastes from the cashew industry. The liquid obtained after extraction of the shells is called the cashew nut shell liquid (CNSL) and is source of unsaturated long-chain phenols that are of many industrial applications (Rodrigues et.al 2006).

One among the components of CNSL is anacardic acid 3, this report gives the synthetic conversion of anacardic acid to 1,4,5-trihydroxy anthraquinone (Scheme 1). This is the first report for the 1,4,5-trihydroxyanthraquinone 9 to be synthesized from the agro-waste cashew nut shells

Subjecting compound 9 to Marschalk reaction could not give the desired product. However quinizarin 10 from commercial source reacted well with acetaldehyde. Considering the useful biological activities of anthraquinones and anacardic acid the study was further extended to synthesize esters of 2-substituted 1,4-dihydroxy-9,10-anthraquinones

Biography (200 word limit)

MS Lydia Kisula is as a researcher at the Tanzania Industrial Research and development Organization (TIRDO). Kisula's main interest is on drug discovery process and currently is a full time PhD student at Rhodes University (RSA). Kisula has mainly been working on the value addition of anacardic acid to useful industrial chemicals. This utilization is thought to be important in adding value to the cashew crop in countries where it is planted particularly Tanzania.

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