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Total Synthesis based with the Natural Furanonaphthoquinone Scaffold and their Biological activity evaluation

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Abstract

Furanonaphthoquinones (FNQs) are a group of small molecules that have been found to exhibit a variety of biological activities, including antimicrobial and anticancer activities. Their natural occurrence include plants of the Bignoniaceae family. Bioactivity-guided fractionation and isolation of Radermachera boniana Dop led to the separation and identification of napabucasin, which is a cytotoxic FNQ that can selectively target cancer stemness and metastasis. The study of napabucasin has been extensive and according to the National Cancer Institute, napabucasin is currently involved in several active clinical trials for treating cancer, including advanced and metastatic colorectal cancer. To cope with the increasing demand of an effective synthesis approach for the lead compound for its further development into a drug candidate, a facile and economic total synthesis route has been established. Moverover, derivatives of napabucasin have been synthesized in order to study the structure-activity relationship (SAR) so as to provide evidence for lead optimization and also for unraveling the mechanism of action.

Biography:

Chik Wai I is a PhD student from the Hong Kong Baptist University. Her area of research interest is synthesis and structural derivatization of anticancer natural compounds.

Speaker Publications:

"Total Synthesis Based on the Natural Furanonaphthoquinone Scaffold and Their Biological Activity Evaluation".
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