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High Throughput Screening and Characterization of the Mode-of-Action of Natural Products

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igh throughput screening (HTS) offers an alternative to relying on ethnophoarmacological knowledge for the identification In of bioactive natural products (both extracts and pure compounds) with specific bioactivity. However, the development of natural products compatible assays is a prerequisite as various components of extracts of natural products impact assay performance leading to high rate of false-positives and/or false-negatives. The use of cell-based HTS assys overcomes many of the shortcomings of HTS with natural products. However, cell-based assays also often complicate the identification of the cellular mode-of-action of natural products. We have been successfully using screening platforms based on yeast genomic deletion mutant libraries and/or profiling change in the activity of transcription factors to gain insight into cellular mode-of-action of HTS hits. Herein we decribe the identification of two extracts as HTS hits and the elucidation of their cellular mechanism-of-action using transcription factor activity profiling and yeast deletion mutants.

Biography

Girma Woldemichael completed his PhD at Heidelberg University (Germany) in 2000 and postdoctoral studies at University of Arizona and NClfrom 2001-2007. He is currently working as a Staff Scientist at Leidos Biomedical Research Inc., in support of the Molecular Targets Laboratory/NCI. He has published more than 20 papers in reputed journals and has been serving as an editorial board member of a number of journals.

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