

## Bioactive constituents from some medicinal resins of *Commiphora* species

Ethiopia is well known since ancient times as the original source of a variety of natural products such as civet, coffee, myrrh, frankincense, etc. In the international market myrrh enjoy high demand because of its extract that have been used as components of perfumes and aromatherapy and skin care products and other medicinal values. We are working on analysis of bioactive compounds from resins of *Commiphora* species collected from Ethiopia (namely *C. myrrha*, *C. sphaerocarpa*, *C. erlangeriana* Engl. and *C. africana*) and Kenya (*C. confusa*, *C. holtziana* and *C. kataf*). At the same time we gathered ethnobotanical information on different parts of these species. We reported furanosesquiterpenes from myrrh (.resin of *C. myrrha*) and resin of *C. sphaerocarpa*. Furanoeudesma-1,3-diene the major compound from myrrh have analgesic activity in mice. Previously we reported oxygenated furanosesquiterpenes, curzerenone, and furanodienone from the resins of *C. sphaerocarpa* Chiov., *C. holtziana* Engl. and *C. kataf*. Furanodienone were reported to have anti-infl ammatory, antimicrobial and anticancer activities. Mansumbinone, mansumbinol, (16S, 20R)-dihydroxydammar-24-en-3-one and two octanordammarane triterpenes were isolated from the resin of *C. kua*. Mansumbinone possesses strong anti-infl ammatory activity. Cytotoxicity of nordammarane were also reported. The resins of *C. confusa* contain dammarane types of triterpenes which also exhibited moderate cytotoxic activity. From the resin of *C. erlangeriana* we reported bio-active polygamain-type lignans, named erlangerin A and erlangerin B, and two lignans related to podophyllotoxin, namely erlangerin C and erlangerin D. Recently, we reported a new tricyclic triterpene acid 3S,4S,14S,7E,17E,21Z)-3,30-dihydroxy podioda-7,17,21-trien-4- carboxylic acid (commafric A) from the resin of *Commiphora africana* along with  $\alpha$ -amyrin. Commafric A showed significant anti-proliferative effects against non-small cell lung cancer (A549) with IC50 values of 4.52  $\mu$ g/ml among four cancer cell lines tested which suggests that commafric A has a potential as a lead compound in the search for new drugs against cancer diseases.

### Publications

Dinku W, Isaksson J, Rylandsholm FG, Bouř P, Brichtová E , Choi SU, Lee S-H, Jung Y-S., No ZS., Svendsen JSM, Aasen AJ, Dekebo A (2020) Anti-proliferative activity of a novel tricyclic triterpenoid acid from *Commiphora africana* resin against four human cancer cell lines. Appl. Biol. Chem . (In press, <https://doi.org/10.1186/s13765-020-00499-w>).

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### Biography

Aman Dekebo (PhD) has extensive research experiences in bio-active natural product chemistry, synthesis and chemical ecology. Professor Aman at the beginning of his career joined Gonder College Medical Sciences, Addis Ababa University as a graduate assistant in 1990 and was then promoted to the lecturer position and served in the college until 2002. He was also worked as a research fellow at Ehime University, Japan (2002-2007) based in Kochi University, Japan. He was then worked as Assistant Professor of Chemistry, Ambo, University, 2008-2012. In February 2012, he joined Adama Science and Technology University as Assistant professor and then promoted to Associate Professor and full presser position in the same University. He also worked as a researcher at Andong National University, South Korea during his sabbatical extended leave (February, 2017-February 28, 2019)..

