

**IBDA/LiBr-MEDIATED FUNCTIONALISATION OF  
*ent*-TRACHYLOBAN-19-OIC ACID**

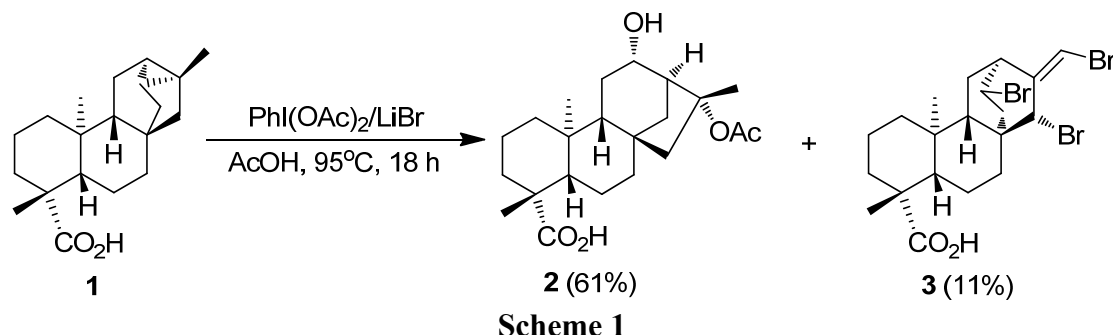
Olga Morarescu, Marina Grinco, Alic Barba, Nicon Ungur

*Institute of Chemistry, Academy of Sciences of Moldova, Academiei str. 3,  
MD-2028 Chisinau, Republic of Moldova  
e-mail: olea\_chetraru@yahoo.com*

*ent*-Trachyloban-19-oic acid (**1**) was isolated from sunflower *Helianthus annuus* L. [1-4]. It exhibited weak cytotoxic activity against gastric carcinoma [5] and displayed *in vivo* anti-inflammatory activity [4].

In order to obtain new polyfunctionalized tetracyclic terpenoids, the transformation of *ent*-trachyloban-19-oic acid (**1**) was carried out by studying a PhI(OAc)<sub>2</sub>/LiBr reaction [6].

As a result, a mixture of polyfunctionalized tetracyclic diterpenoids (**2**) and (**3**) was obtained, which was purified by column chromatography. The major compound (**2**) (61%) was identified as the functionalized at C-12 and C-16 *ent*-kaurenic derivative. The minor compound (**3**) (11%) had an *ent*-atisanic structure and it was functionalized at C-13, C-15 and C-17 atoms. The structure and stereochemistry of the newly synthesized compounds (**2**) and (**3**) were established on the basis of their IR, NMR spectral and GS-MS data.



In conclusion, the oxidative conversion of *ent*-trachyloban-19-oic acid (**1**) under treatment with IBDA/LiBr led basically to *ent*-kaurenic carbonic framework derivatives.

**References:**

1. Pyrek, J. St. *Tetrahedron*, **1970**, *26*, 5029-5032.
2. Ungur, N.; Grinco, M.; Kulcički, V.; Barba, A.; Bizîcci, T.; Vlad, P. F. *Chem. J. Mold.* **2008**, *4* (2), 106-109.
3. Sanni, S. B.; Behm, H.; Garcia-Granda, S.; Beurskens, P.(T.; Moers, F. G. *J. Crystallogr. Spectrosc. Res.*, **1990**, *20*, 483-489.
4. Diaz-Viciedo, R.; Hortelano, S.; Giron, N.; Masso, J. M.; Rodriguez, B.; Villar, A.; De las Heras, B. *Biochem. Biophys. Res. Commun.*, **2008**, *369*, 761-766.
5. Ngamrojnavanich, N.; Tonsiengsom, S.; Lertpratchya, P.; Roengsumran, S.; Puthong, S.; Petsom, A. *Arch. Pharm. Res.*, **2003**, *26*, 898-901.
6. Emmanuvel, L.; Ali Shaikh, T. M.; Sudalai, A. *Org. Lett.*, **2005**, *7* (22), 5071-5074.