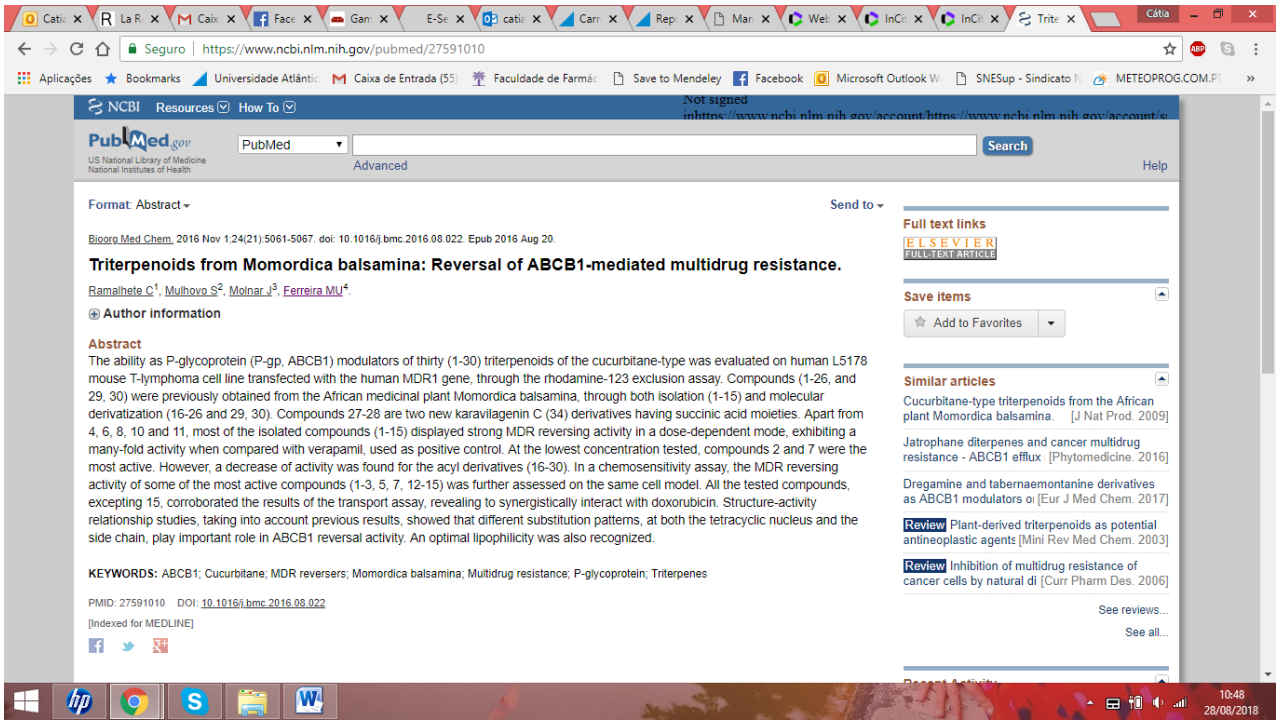
Seguro | https://www.ncbi.nlm.nih.gov/pubmed/27591010
NCBI Resources How To
PubMed.gov
US National Library of Medicine
National Institutes of Health
PubMed
Search
Advanced
Help
Format: Abstract
Send to
Bioorg Med Chem. 2016 Nov 1;24(21):5061-5067. doi: 10.1016/j.bmc.2016.08.022. Epub 2016 Aug 20.
Triterpenoids from Momordica balsamina: Reversal of ABCB1-mediated multidrug resistance.
Ramalhete C[1], Mulhovo S[2], Molnar J[3], Ferreira MU[4].
Author information
Abstract
The ability as P-glycoprotein (P-gp, ABCB1) modulators of thirty (1-30) triterpenoids of the cucurbitane-type was evaluated on human L5178 mouse T-lymphoma cell line transfected with the human MDR1 gene, through the rhodamine-123 exclusion assay. Compounds (1-26, and 29, 30) were previously obtained from the African medicinal plant Momordica balsamina, through both isolation (1-15) and molecular derivatization (16-26 and 29, 30). Compounds 27-28 are two new karavilagenin C (34) derivatives having succinic acid moieties. Apart from 4, 6, 8, 10 and 11, most of the isolated compounds (1-15) displayed strong MDR reversing activity in a dose-dependent mode, exhibiting a many-fold activity when compared with verapamil, used as positive control. At the lowest concentration tested, compounds 2 and 7 were the most active. However, a decrease of activity was found for the acyl derivatives (16-30). In a chemosensitivity assay, the MDR reversing activity of some of the most active compounds (1-3, 5, 7, 12-15) was further assessed on the same cell model. All the tested compounds, excepting 15, corroborated the results of the transport assay, revealing to synergistically interact with doxorubicin. Structure-activity relationship studies, taking into account previous results, showed that different substitution patterns, at both the tetracyclic nucleus and the side chain, play important role in ABCB1 reversal activity. An optimal lipophilicity was also recognized.
KEYWORDS: ABCB1; Cucurbitane; MDR reversers; Momordica balsamina; Multidrug resistance; P-glycoprotein; Triterpenes
PMID: 27591010 DOI: 10.1016/j.bmc.2016.08.022
[Indexed for MEDLINE]
Full text links
ELSEVIER FULL-TEXT ARTICLE
Save items
Add to Favorites
Similar articles
Cucurbitane-type triterpenoids from the African plant Momordica balsamina. [J Nat Prod. 2009]
Jatrophane diterpenes and cancer multidrug resistance - ABCB1 efflux. [Phytomedicine. 2016]
Dregamine and tabernaemontanine derivatives as ABCB1 modulators o [Eur J Med Chem. 2017]
Review Plant-derived triterpenoids as potential antineoplastic agents [Mini Rev Med Chem. 2003]
Review Inhibition of multidrug resistance of cancer cells by natural di [Curr Pharm Des. 2006]
See reviews...
See all...
10:48
28/08/2018