26Q-am03

Quassinoids: Viral Protein R Inhibitors from Picrasma javanica Bark Collected in Myanmar

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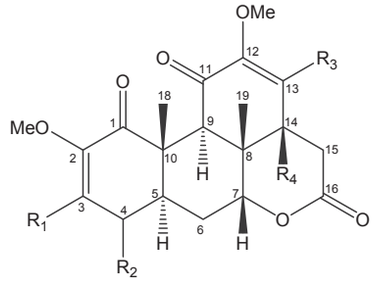
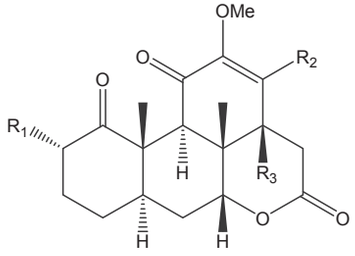
[Purpose] Myanmar is a tropical country with a rich source of medicinal plants and local people have been used them in the traditional medicine since time immemorial. Although *Picrasma javanica* bark has been used for the treatment of cancer, diabetes, malaria and AIDS for a long time, the chemical constituents and biological activities have not been explored yet. This study focused on the isolation of secondary metabolites and evaluation of their inhibitory effects on Viral protein R (Vpr) of human immuno deficiency virus.

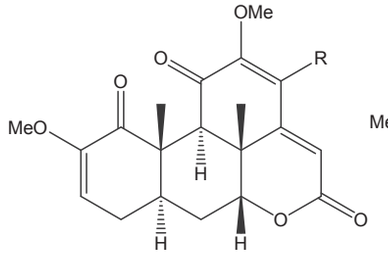
[Methods and Results] The chemical constituents were isolated from the chloroform extract of *P. javanica* bark using combination of various chromatographic methods. The structures of all the isolates were elucidated on the basis of spectroscopic analyses. The isolation of chloroform soluble extract of *P. javanica* afforded thirteen new quassinoids, picrajavanicins A–M (**1**–**13**), together with three known analogues, javanicins B (**14**), F (**14**), and I (**16**). The absolute configuration at C-4 of picrajavanicin L (**12**) was determined to be *S* by the modified Mosher method. The anti-Vpr activities of picrajavanicins A–K (**1**–**11**), and M (**13**), and javanicins B (**14**), F (**15**), and I (**16**) were evaluated against TREx-HeLa-Vpr cells and their structure-activity relationships (SAR) were studied. Among the tested compounds, javanicin I (**16**) exhibited the most potent anti-Vpr activity with 2.5 μM in comparing with that of the positive control, damnacanthal.



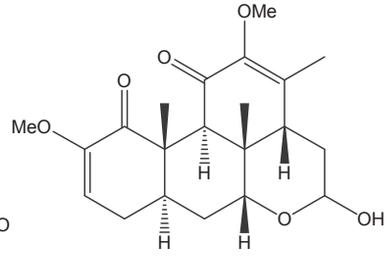
	R_1	R_2	R_3	R_4
1	H	H	CHO	H
5	OMe	H	Me	H
6	OMe	H	Me	OH
8	H	H	CH_2OH	H
10	OMe	H	CH_2OH	H
11	H	=O	Me	H
12	H	β-OH	Me	H
13	H	α-OH	Me	H
15	H	H	Me	H



	R_1	R_2	R_3
2	OH	Me	H
3	OMe	Me	H
4	OH	Me	OH
9	OH	CH_2OH	H



	R
7	CH_2OH
16	Me



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