

Supplementary Information

The observed ^1H -NMR differences data of these lignans are coherent with the literature data, as well as their ^{13}C -NMR data.



Niranthin: ^1H NMR^{1,2} (500 MHz, CDCl_3), δ : 6.30 (1H, *d*, $J=1.15$ Hz, H-2), 5.93 (2H, *s*, -OCH₂O-), 3.83 (3H, *s*, 5-OCH₃), 6.25 (1H, *d*, $J=1.15$ Hz, H-6), 2.59 (2H, *t*, $J=5.15$, H-7), 2.63 (2H, *t*, $J=8.05$, H-7'), 2.02 (1H, *m*, H-8), 3.30 (2H, *s*, H-9), 3.30 (3H, *s*, 9-OCH₃), 6.62 (1H, *d*, $J=1.70$ Hz, H-2'), 3.86 (3H, *s*, 3'-OCH₃), 3.82 (3H, *s*, 4'-OCH₃), 6.76 (1H, *d*, $J=8.00$ Hz, H-5'), 6.65 (1H, *dd*, $J=2.30$ Hz, 8.05 Hz, H-6'), 2.66 (2H, *dd*, $J=2.85$ Hz, 6.85 Hz, H-7'), 2.67 (2H, *t*, $J=6.90$ Hz, H-7'), 2.02 (1H, *m*, H-8'), 3.30 (2H, *s*, H-9'), 3.30 (3H, *s*, 9'-OCH₃).

^{13}C NMR (125 MHz, CDCl_3), δ : 135.7 (C-1), 103.2 (C-2), 148.6 (C-3), 133.6 (C-4), 101.3 (-OCH₂O-), 143.4 (C-5), 56.5 (5-OCH₃), 108.0 (C-6), 35.5 (C-7), 40.9 (C-8), 72.6 (C-9), 59.0 (9-OCH₃O), 133.2 (C-1'), 112.1 (C-2'), 147.1 (C-3'), 55.9 (3'-OCH₃), 148.7 (C-4'), 55.8 (4'-OCH₃), 110.9 (C-5'), 121.1 (C-6'), 35.0 (C-7'), 40.8 (C-8'), 72.5 (C-9'), 58.9 (9'-OCH₃).

References:

[1] Noor, N.A.M., Nafiah, M.A., Tuan Johari, S.A.T., Hasnan, M.H.H., Tan, S.P., Liew, S.Y. and Supratman, U., 2019. Anticancer Effect of Hypophyllanthin, Niranthin and Lintetralin From *Phyllanthus amarus* on HeLa Cells And NIH/3T3 Cells. *International Journal of Recent Technology and Engineering*, 8(2S7), pp.106-110.

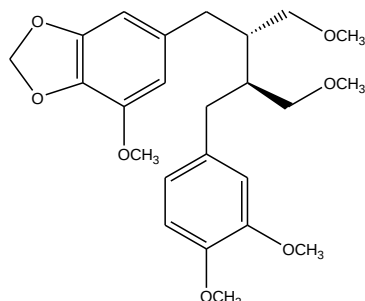
[2] Manju Singh, Neerja Tiwari, Karuna Shanker, Ram Kishore Verma, Anil Kumar Gupta & Madan Mohan Gupta (2009) Two new lignans from *Phyllanthus amarus*, *Journal of Asian Natural Products Research*, 11:6, 562-568, DOI: 10.1080/10286020902939174

CERTIFICATE OF ANALYSIS

Date: 23.10.2019

NIRANTHIN

Product code : **N006**
 Lot. no. : T18C277
 Storage : At 18-25°C



Valid up to : March 2022

Molecular formula : C₂₄H₃₂O₇
 Formula weight : 432.51
 CAS No : 50656-77-4

TESTS	RESULTS
Description	: Off-white powder
Solubility	: Soluble in chloroform. Insoluble in water
Identity & Purity (by Spectroscopy & Chromatography)	
TLC & HPTLC	: Gives a single principle spot
UV absorption	: Exhibits maxima 233& 279 nm
FTIR	: Characteristic of 'Niranthin'
¹ H and ¹³ C NMR	: Characteristic of 'Niranthin'
MASS	: Characteristic of 'Niranthin'
HPLC purity (By area normalization)	: 95.0%



ANALYST



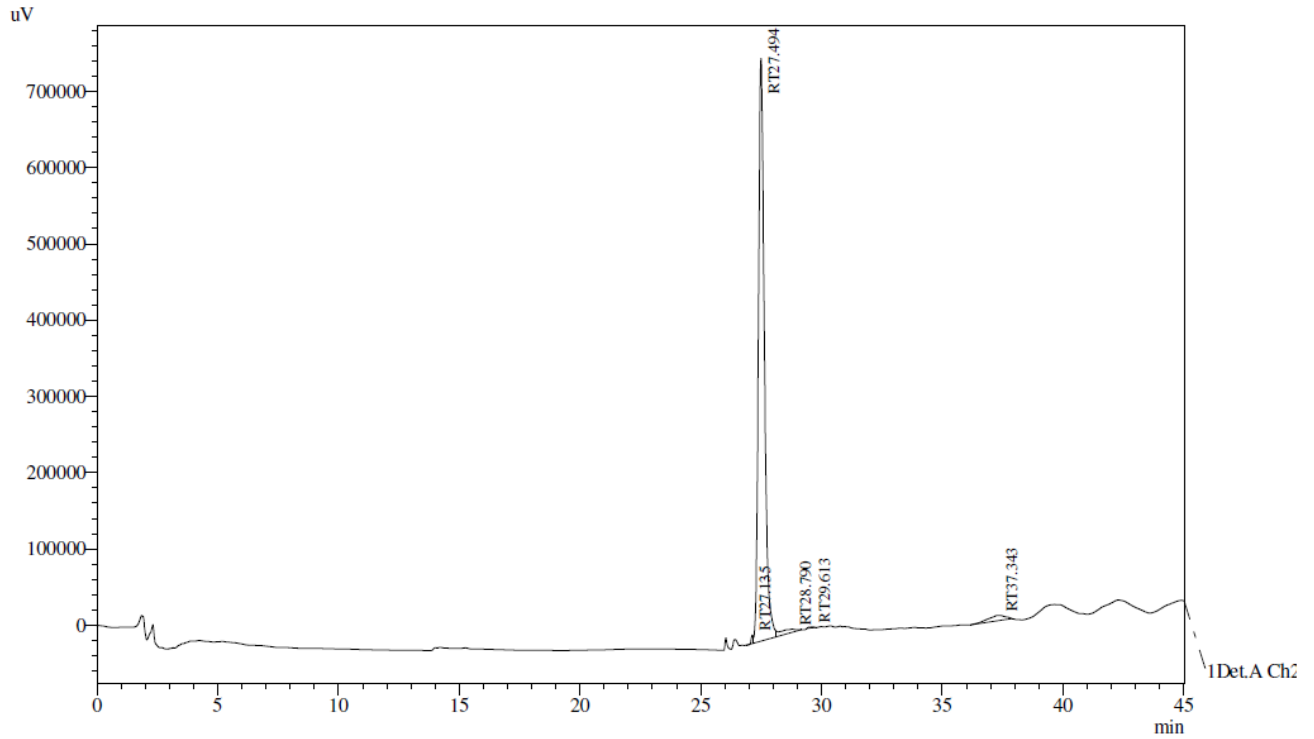
AUTHORISED SIGNATORY

HPLC-CONDITIONS

Chromatographic system: Shimadzu High Performance Liquid Chromatographic System LC 2010CHT with UV detector in combination with Class LC solution software.

Chromatographic conditions			
Column	:	Pinnacle DB C18, 5 μ (250 x 4.6 mm)	
Column oven temperature	:	27 $\pm$ 1°C	
Mobile phase	:	C – 0.140 g of anhydrous potassium dihydrogen orthophosphate (KH ₂ PO ₄) dissolved in 900 ml of HPLC grade water & add 0.5 ml of orthophosphoric acid and made up to 1000 ml with water. The solution was filtered through 0.45 μ membrane filter and degassed in a sonicator for 3 minutes.	
	:	B -Acetonitrile (HPLC grade)	
Flow rate	:	1.5 ml	
Detection Wave length	:	230 nm	
Injection volume	:	20.0 μ l	
Gradient	:	Time	C conc (buffer)
	:	0.01	10
	:	10.00	40
	:	15.00	80
	:	20.00	100
	:	22.00	100
	:	25.01	10
	:	30.00	Controller
Sample preparation	:	About 10 mg of the sample was accurately weighed to a 10 ml volumetric flask. ~5 ml of methanol was added & sonicated cooled & made up to 10 ml.	
	:	Stop	

HPLC CHROMATOGRAM



Detector A Ch2 230nm

PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	27.135	55833	11009	0.406	1.398
2	27.494	13086210	763623	95.045	97.003
3	28.790	256553	4220	1.863	0.536
4	29.613	19034	1339	0.138	0.170
5	37.343	350757	7027	2.548	0.893
Total		13768388	787219	100.000	100.000