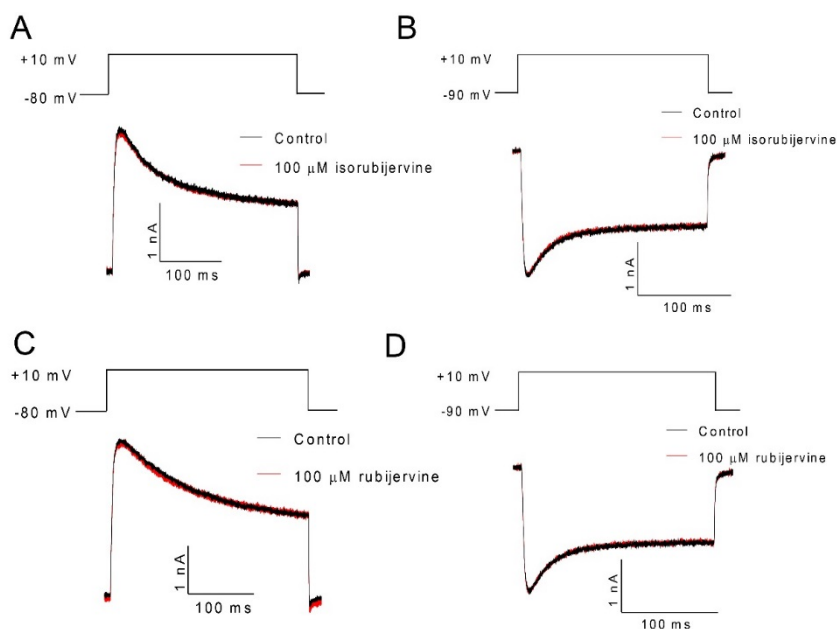


# Supplementary Materials: Alkaloids from *Veratrum taliense* Exert Cardiovascular Toxic Effects via Cardiac Sodium Channel Subtype 1.5

Gan Wang, Ming-Qiang Rong, Qiong Li, Ya-Ping Liu, Cheng-Bo Long, Ping Meng, Hui-Ming Yao, Ren Lai and Xiao-Dong Luo



**Figure S1.** Effects of isorubijervine and rubijervine on dorsal root ganglion (DRG) neurons. Cells were evoked by a 500-ms depolarizing potential of +10 mV from a holding potential of -80 mV to record  $K_v$  currents. Cells were activated by a 150-ms step depolarization to +10 mV from a holding potential of -90 mV for  $Cav$  currents. The effects of isorubijervine (100  $\mu$ M) on DRG  $K_v$  channel currents (A) and  $Cav$  channel currents (B). Effects of 100  $\mu$ M rubijervine on DRG  $K_v$  channel currents (C) and  $Cav$  channel currents (D).

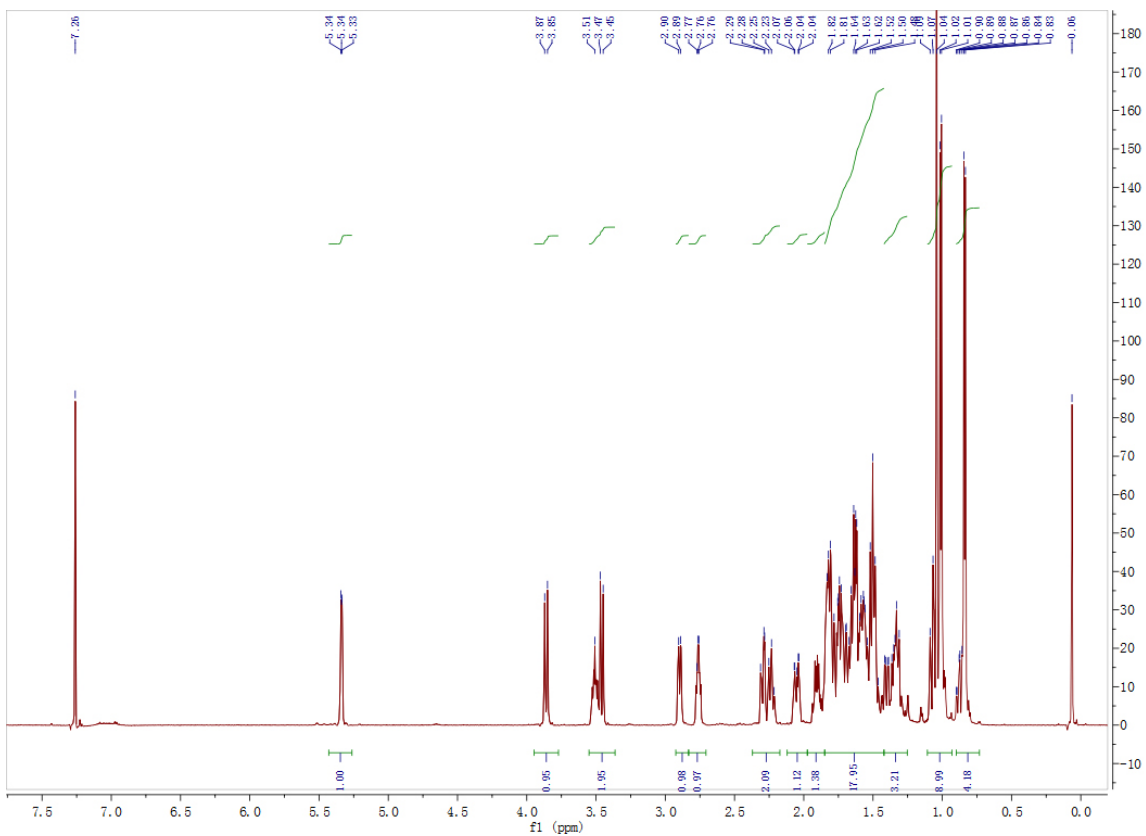


Figure S2. <sup>1</sup>H-NMR spectrum of isorubijervine in CDCl<sub>3</sub>.

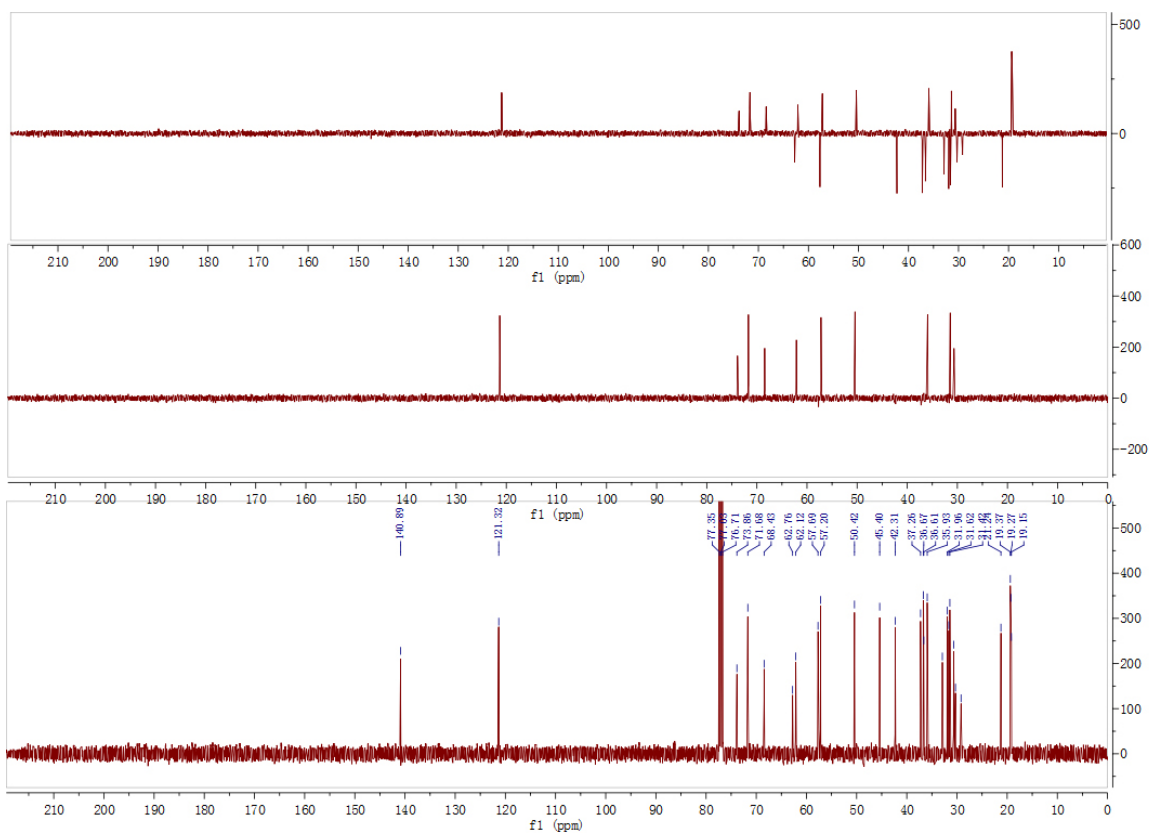


Figure S3. <sup>13</sup>C-NMR spectrum of isorubijervine in CDCl<sub>3</sub>.

**Sample Name** wvt-8      **Instrument Name** Agilent G6230 TOF MS      **User Name** KIB      **IRM Calibration Status** Success  
**Data Filename** 150505ESIA1.d      **ACQ Method** ESI.m      **Acquired Time** 5/5/2015 9:28:43 AM

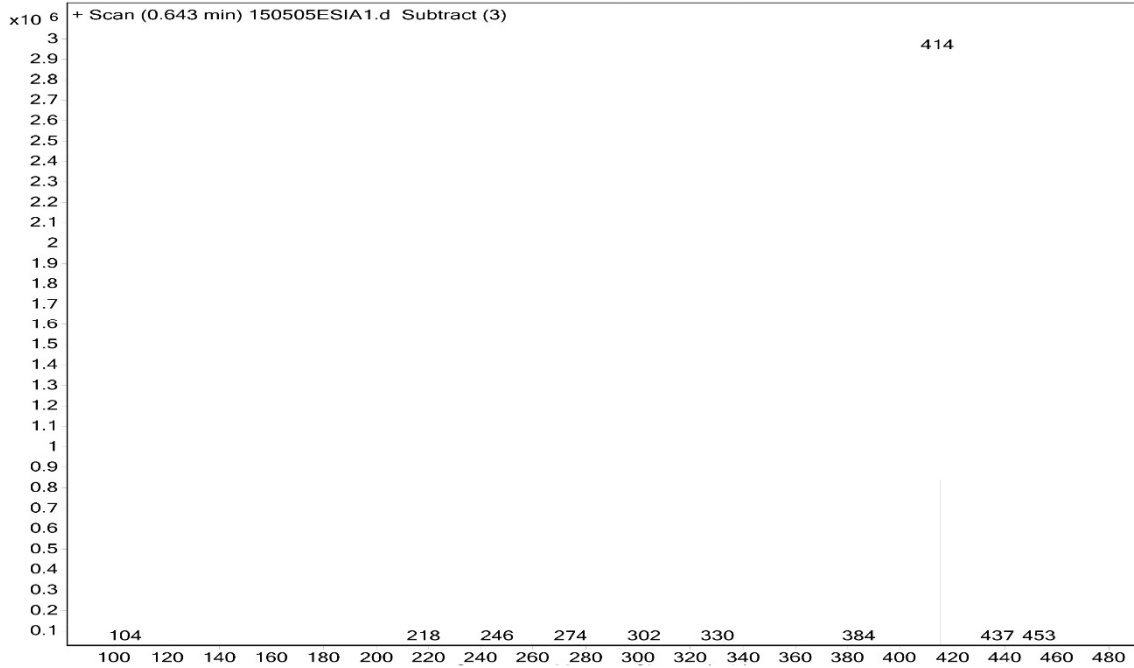


Figure S4. ESI-MS spectrum of isorubijervine.

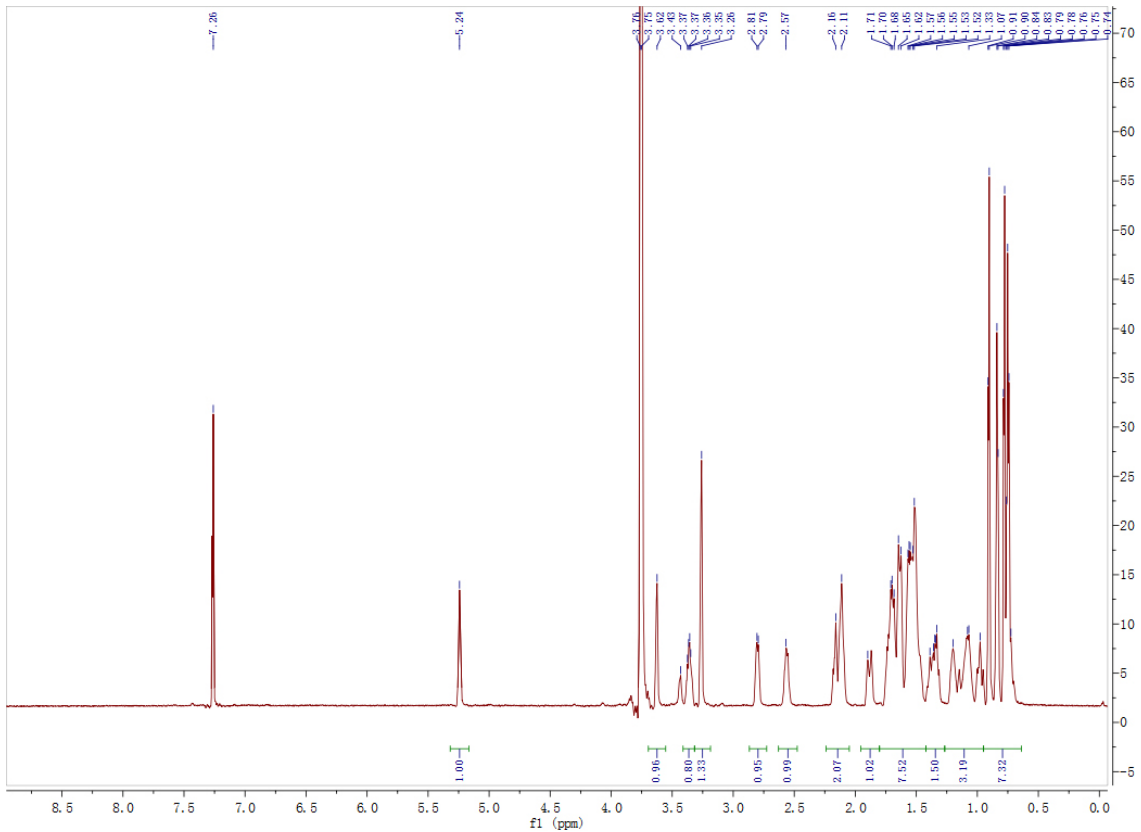


Figure S5. <sup>1</sup>H NMR spectrum of rubijervine in CDCl<sub>3</sub>.

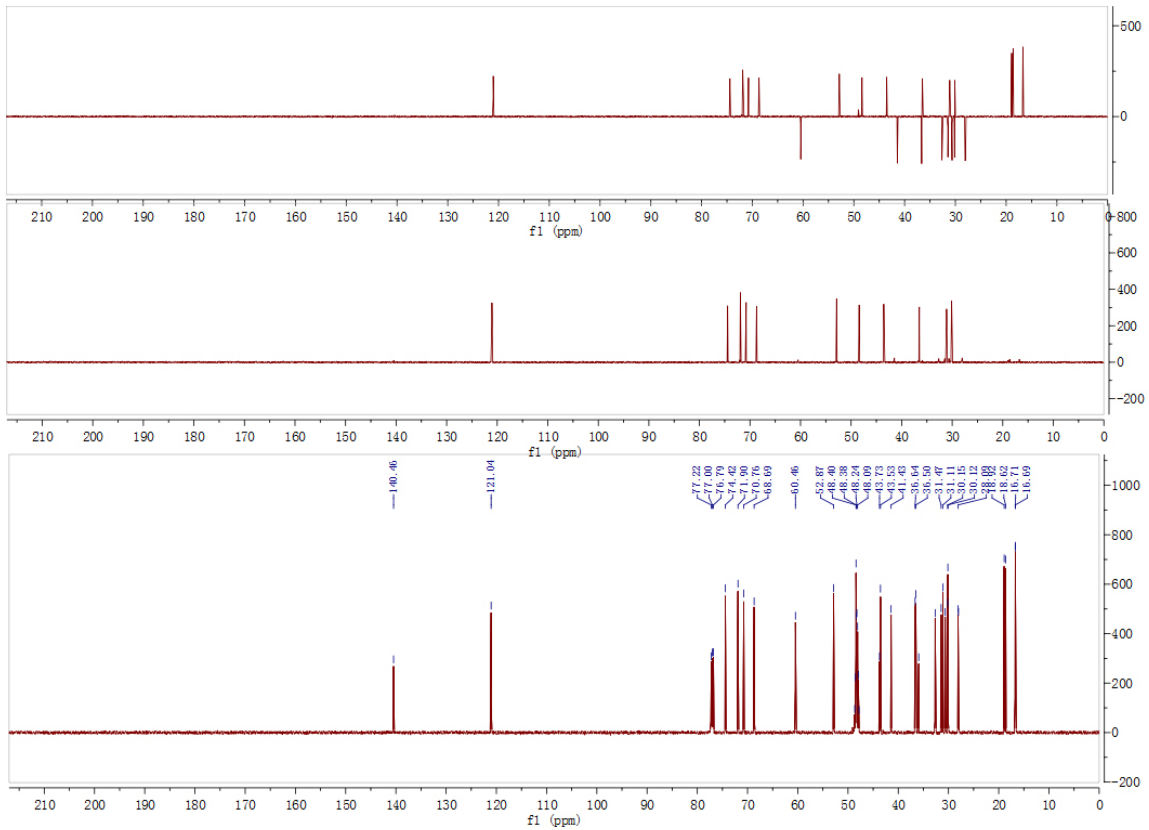
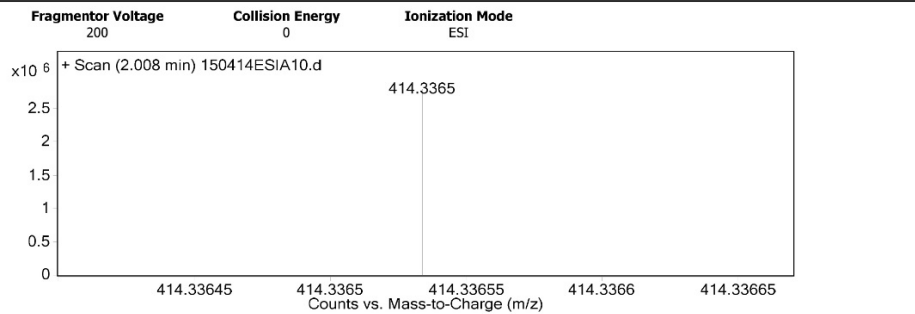


Figure S6. <sup>13</sup>C NMR spectrum of rubijervine in CDCl<sub>3</sub>.

User Spectra



Peak List

m/z	z	Abund	Formula	Ion
121.0509	1	11,5048.14		
412.3221	1	5,9188.88		
414.3365	1	278,6094	C <sub>27</sub> H <sub>44</sub> N O <sub>2</sub>	M+
415.3409	1	81,8768.5	C <sub>27</sub> H <sub>44</sub> N O <sub>2</sub>	M+
416.3438	1	12,5858.18	C <sub>27</sub> H <sub>44</sub> N O <sub>2</sub>	M+
863.6427	1	6,4625.06		
922.0098	1	16,5486.72		
941.6582	1	6,8858.32		
1050.6346	1	9,9226.41		
1051.6375	1	6,1494.29		

Formula Calculator Element Limits

Element	Min	Max
C	0	200
H	0	400
O	0	6
N	1	1

Formula Calculator Results

Formula	CalculatedMass	CalculatedMz	Mz	Diff. (mDa)	Diff. (ppm)	DBE
C <sub>27</sub> H <sub>44</sub> N O <sub>2</sub>	414.3372	414.3367	414.3365	-0.1	-0.3	6.5000

--- End Of Report ---

Figure S7. high resolution electrospray ionization mass spectroscopy (HRESIMS) spectrum of rubijervine. DBE: double bond equivalents.

**Table S1.** IC<sub>50</sub> of two compound on sodium channel (μM).

<b>Compound</b>	<b>rNav1.3</b>	<b>rNav1.4</b>	<b>hNav1.5</b>	<b>hNav1.7</b>
Isorubijervine	12.17 ± 0.77	9.82 ± 0.84	6.962 ± 0.422	-
Rubijervine	-	18.65 ± 1.01	10.81 ± 0.89	-

Notes: values are given as the mean ± SE, *n* = 4; no inhibitory activity detected at a concentration up to 20 μM.