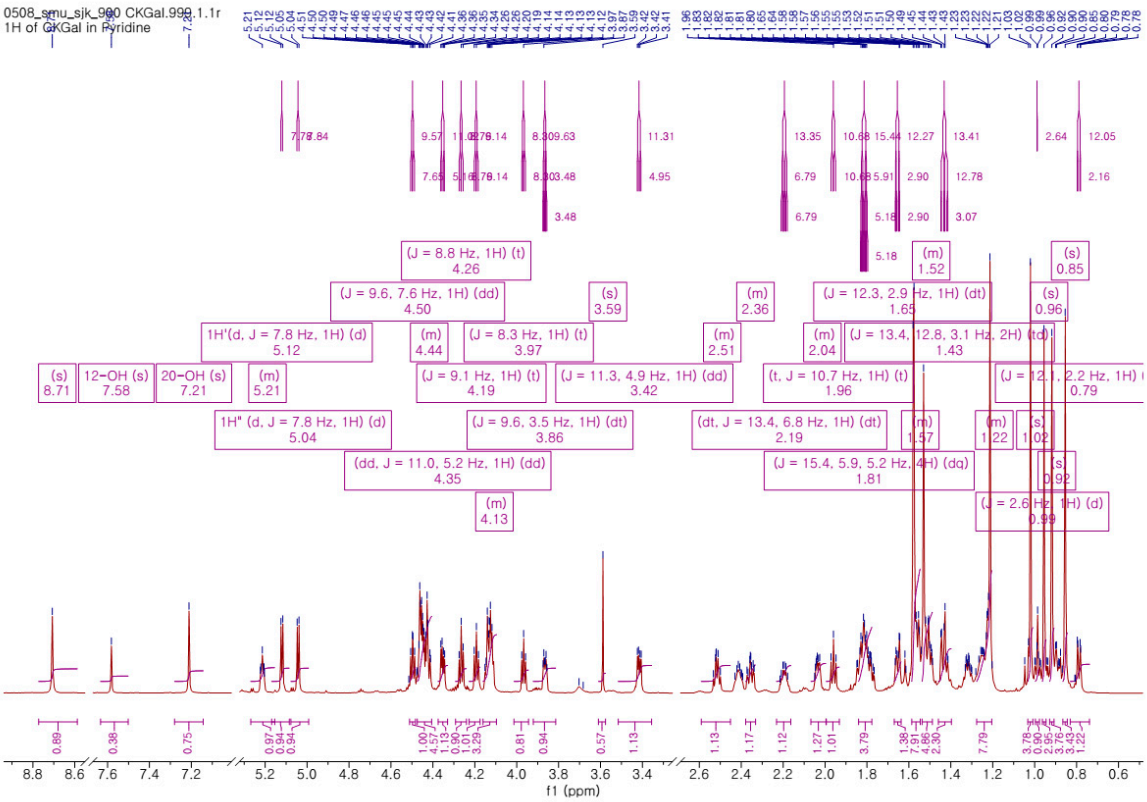
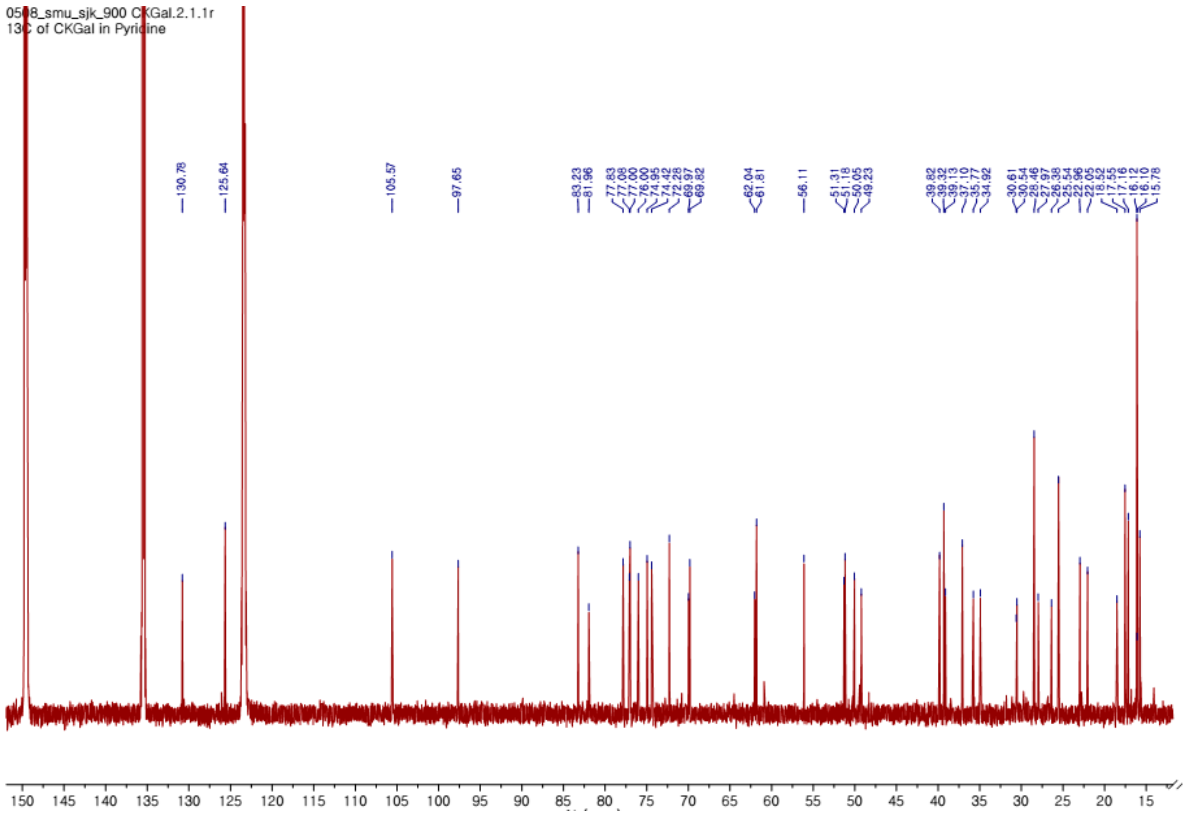
Enzymatically Synthesized Ginsenoside Exhibits Antiproliferative Activity in Various Cancer Cell Lines

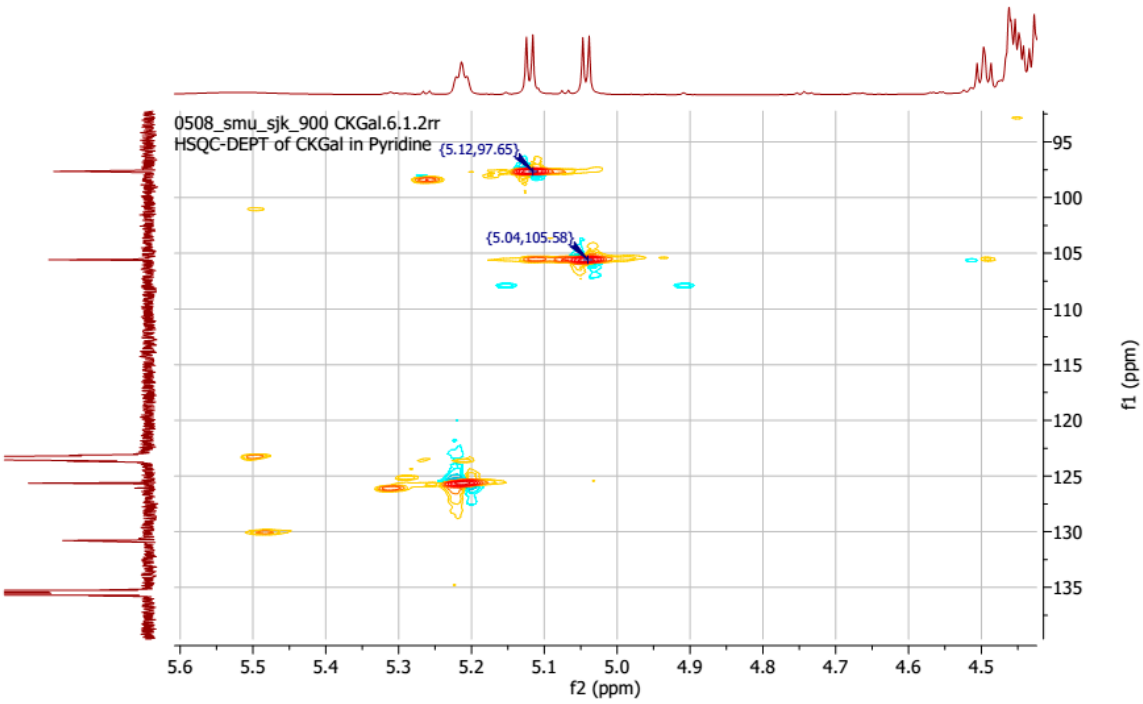
Sumangala Darsandhari, Biplav Shrestha, Ramesh Prasad Pandey, Sanghun Lee, Hye Jin Jung, Yeon Ju Kim and Jae Kyung Sohng



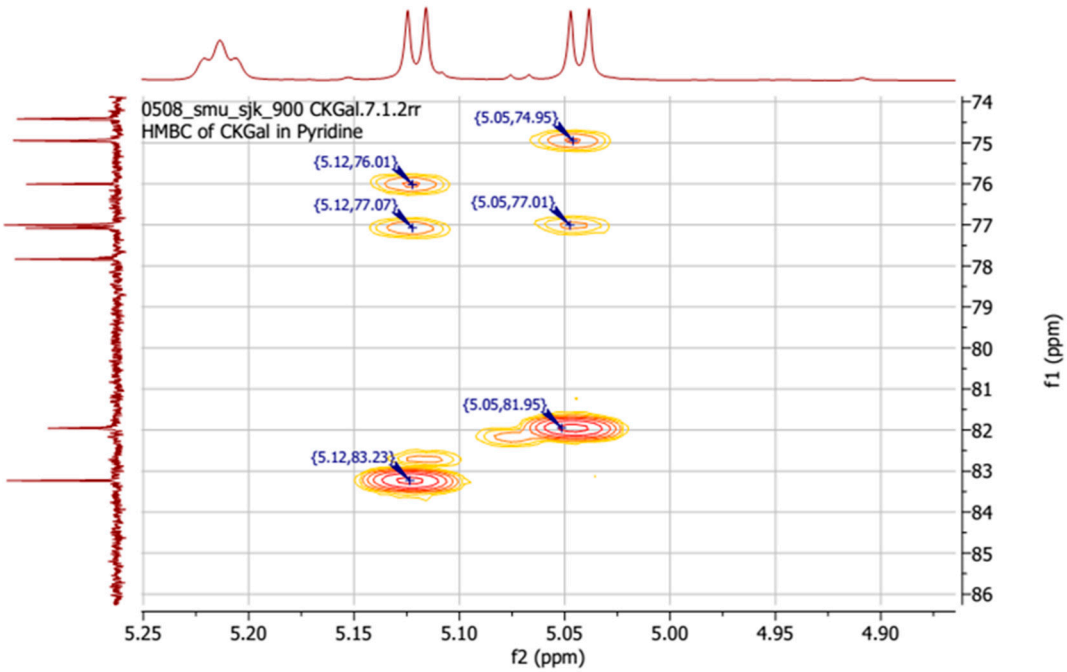
(**A**). ^{1}H NMR spectrum.



(**B**). ^{13}C NMR spectrum.

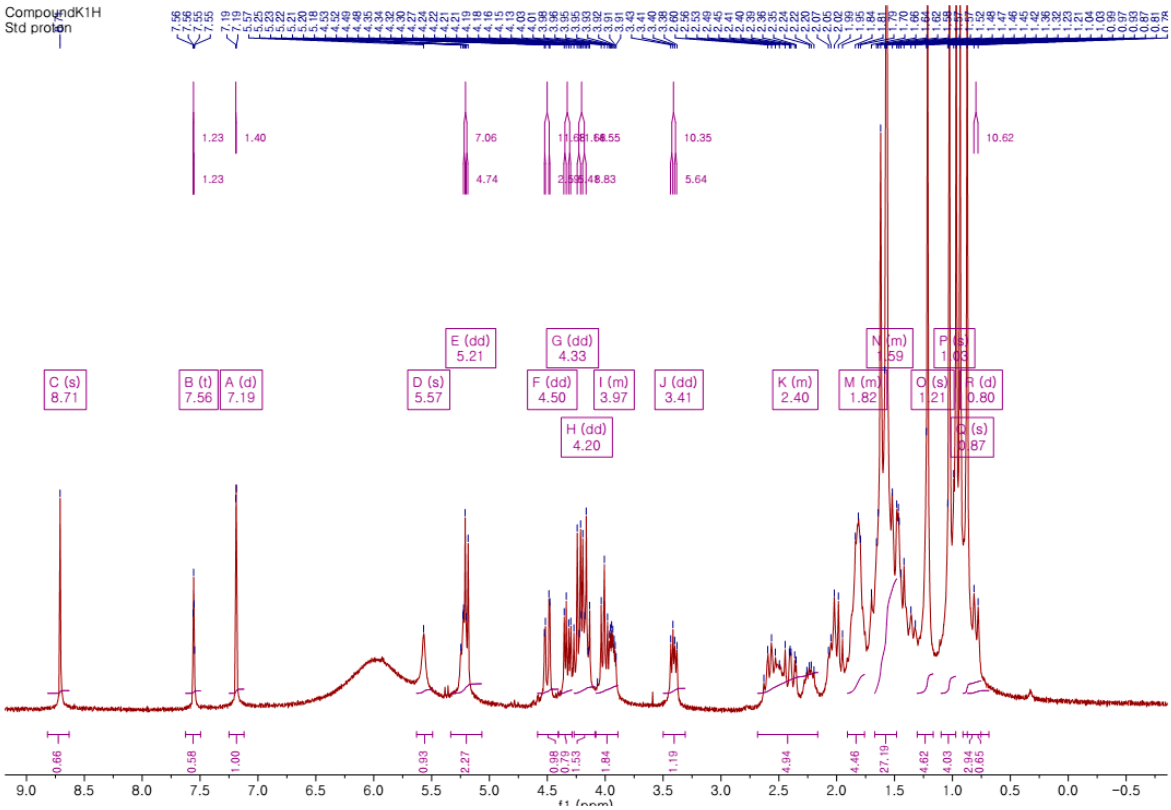


(**C**). HSQC spectrum.

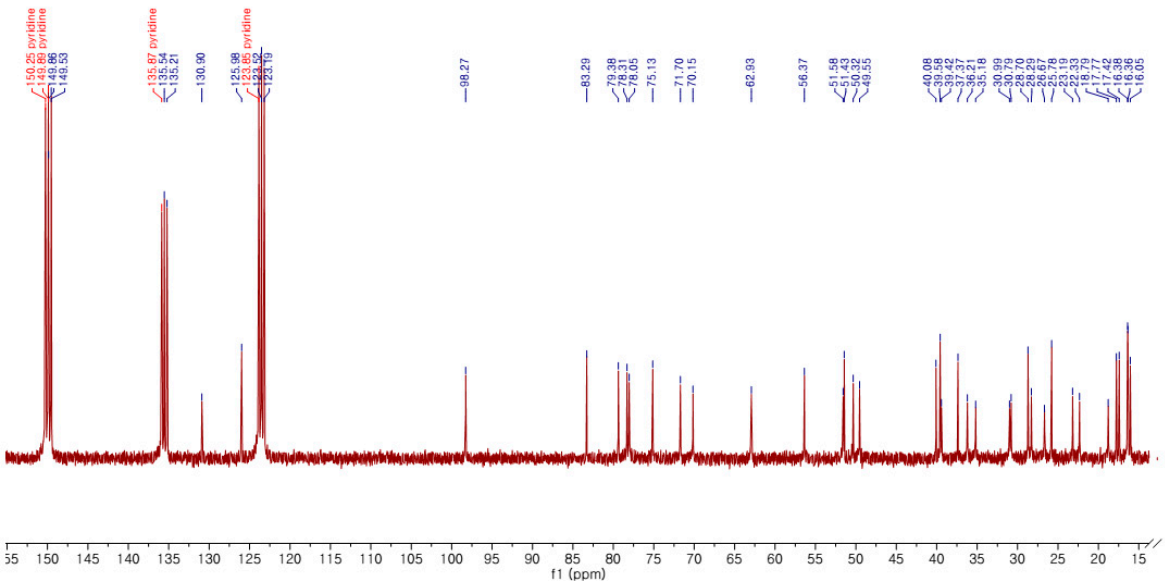


(**D**) HMBC spectrum.

Figure S1. NMR analysis of ginsenoside 20-O-[β-D-lactopyranosyl]-20(S)-protopanaxadiol (CKGal) in Pyridine-d5.



(**A**). ^{1}H NMR spectrum.



(B). ^{13}C NMR spectrum.

Figure S2. NMR analysis of ginsenoside 20-O-[β-D-glucopyranosyl]-20(S)-protopanaxadiol (CK) in Pyridine-d5.

Table S1. Cancer cell line cytotoxicity (μM). Assessment of anticancer activity of compounds Rh2, 3-O-β-D-glucopyranosyl-20(S)-protopanaxadiol; F12, 3-O-β-D-glucopyranosyl-12-O-β-D-glucopyranosyl-20(S)-protopanaxadiol; CK, 20-O-beta-D-glucopyranosyl-20(S)-protopanaxadiol; and CKGal, 20-O-beta-D-lactopyranosyl-20(S)-protopanaxadiol against gastric carcinoma (AGS), skin melanoma (B16F10), cervical carcinoma (HeLa) and brain carcinoma (U87MG). (IC50; μM, Mean ± SD, n=3).

IC_{50} (μM)	Rh_2	F12	CK	CKGal
B16F10	33.71	108.4	35.17	22.40
AGS	21.42	58.58	25.99	4.487
HeLa	28.87	77.68	25.51	40.38
U87MG	24.8	94.64	30.47	40.38