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APPENDIX

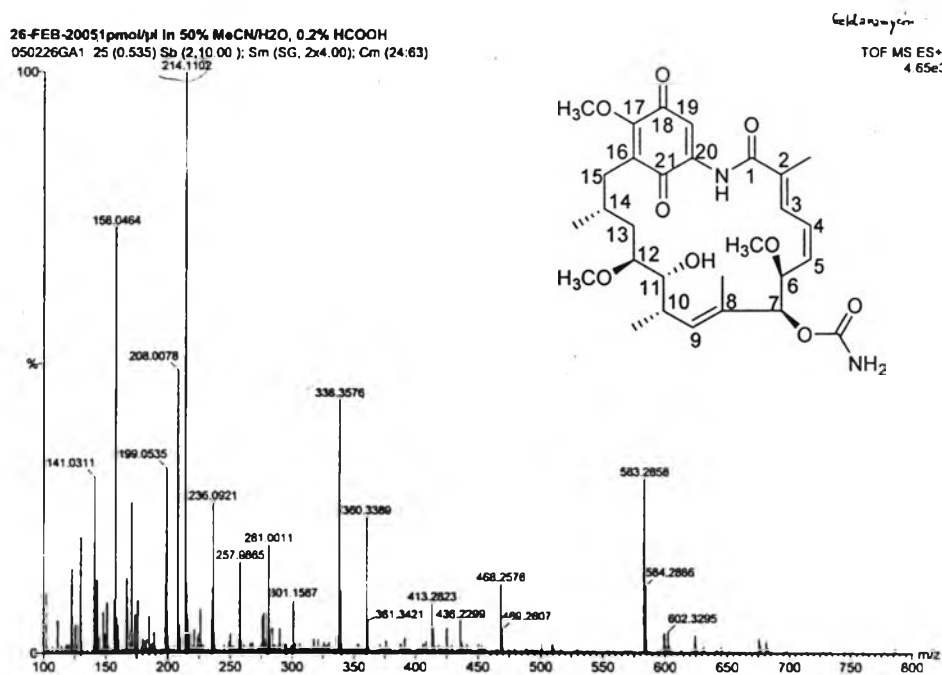


Figure A1. The ESI-Q-TOFMS spectrum of geldanamycin (1).

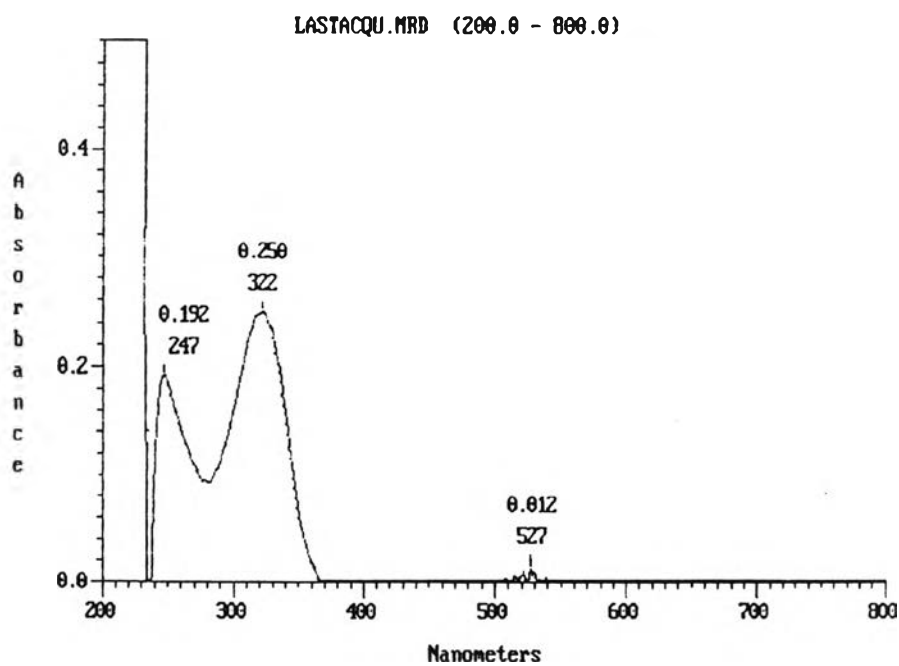


Figure A2. The UV spectrum of geldanamycin (1).

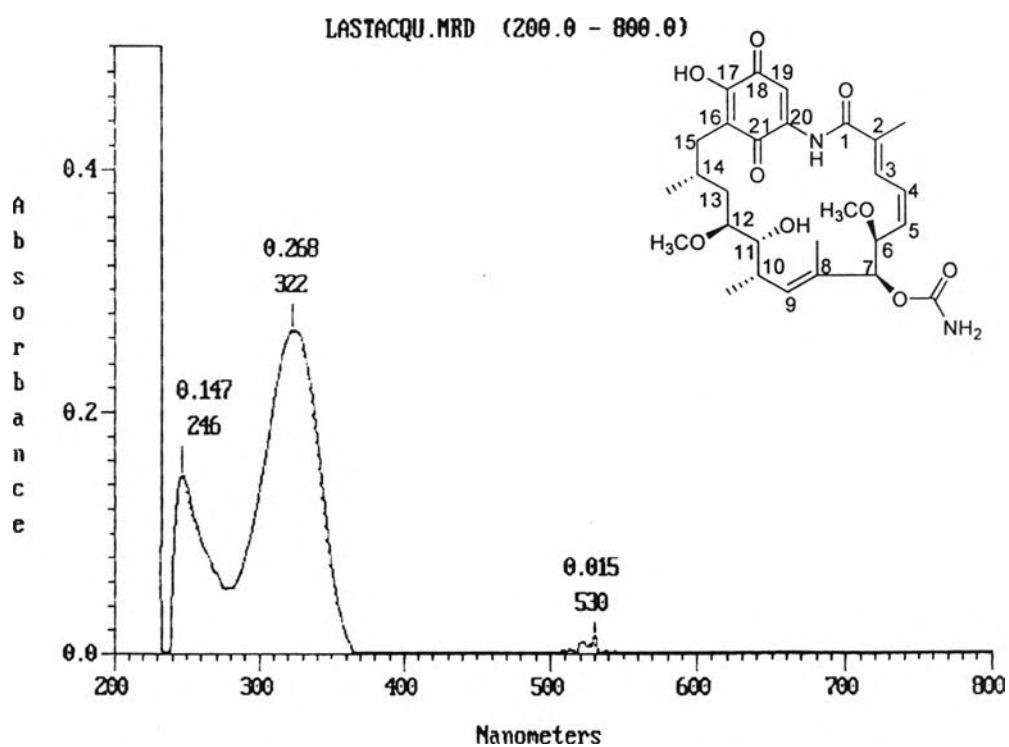


Figure B1. The UV spectrum of 17-*O*-demethylgeldanamycin (2).

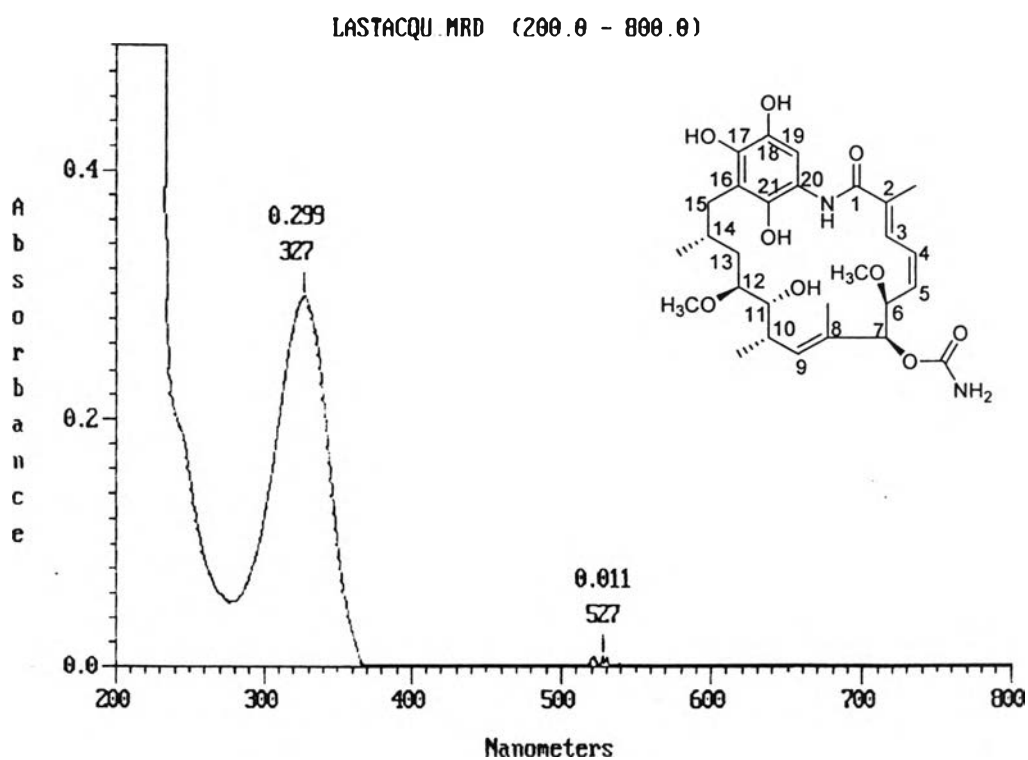


Figure C1. The UV spectrum of 17-*O*-demethylgeldanamycin hydroquinone (5).

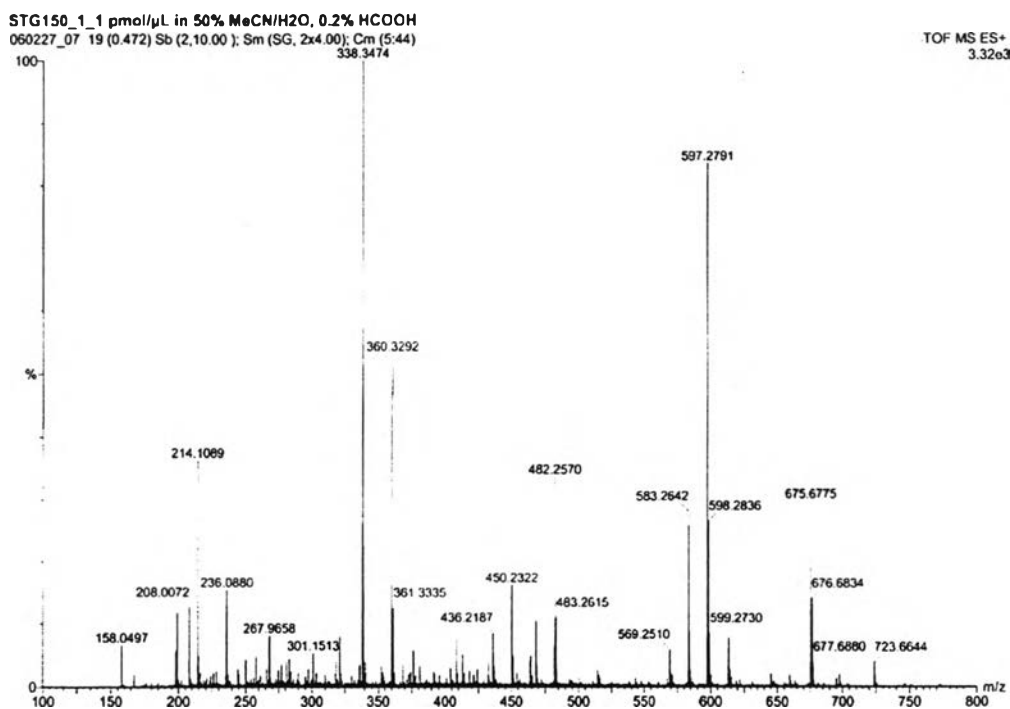


Figure D1. The ESI-Q-TOFMS spectrum of 17-*O*-ethyl-17-*O*-demethylgeldanamycin (6).

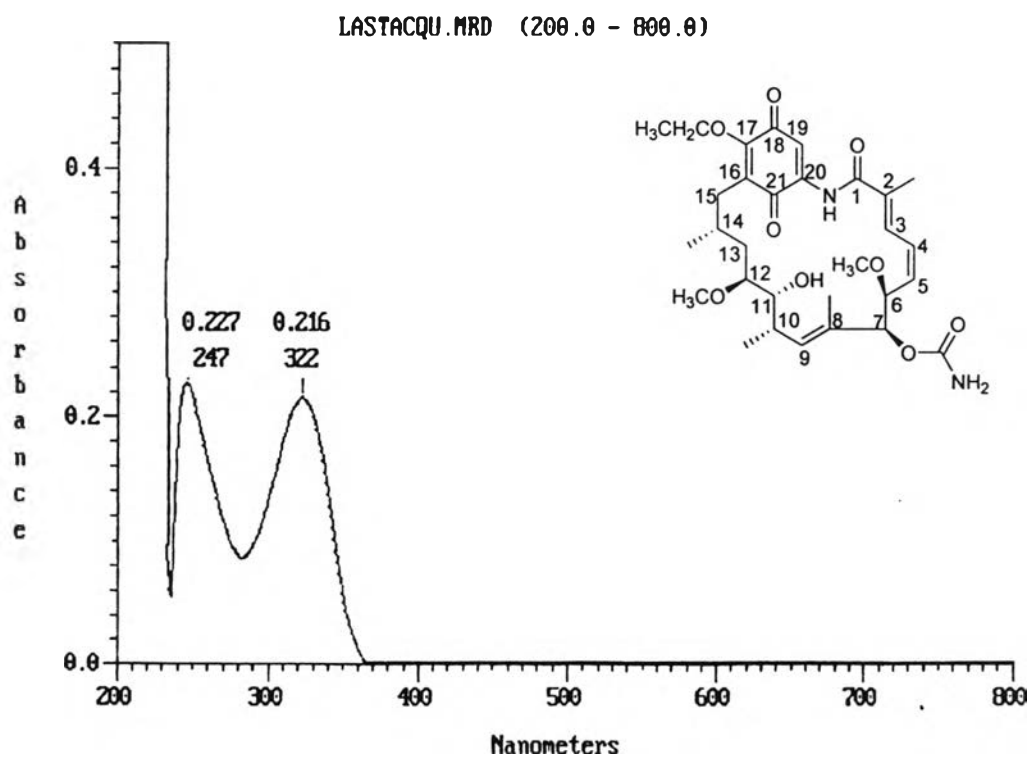


Figure D2. The UV spectrum of 17-*O*-ethyl-17-*O*-demethylgeldanamycin (6).

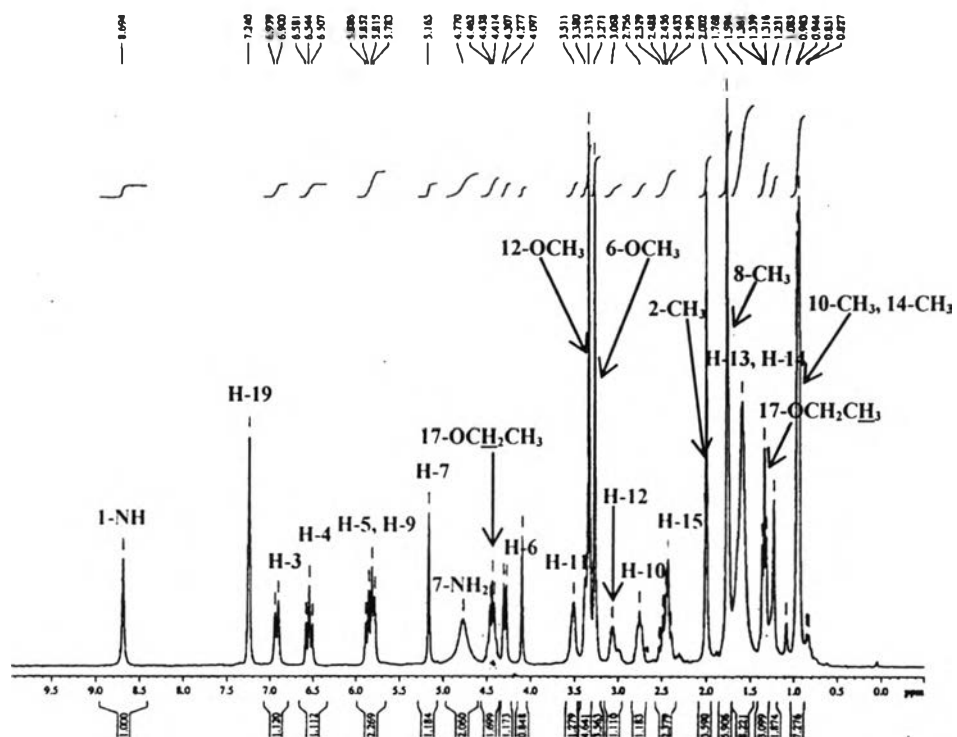


Figure D3. The 300 MHz ^1H -NMR spectrum of 17-*O*-ethyl-17-*O*-demethylgeldanamycin (6).

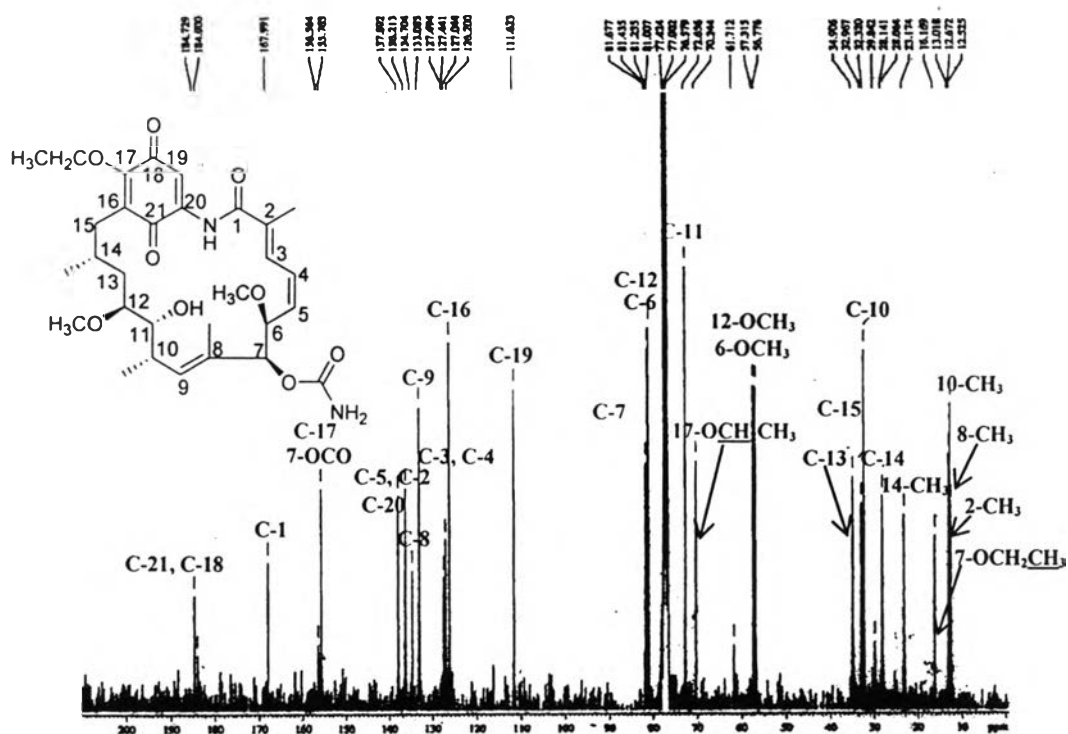


Figure D4. The 75 MHz ^{13}C -NMR spectrum of 17-*O*-ethyl-17-*O*-demethylgeldanamycin (6).

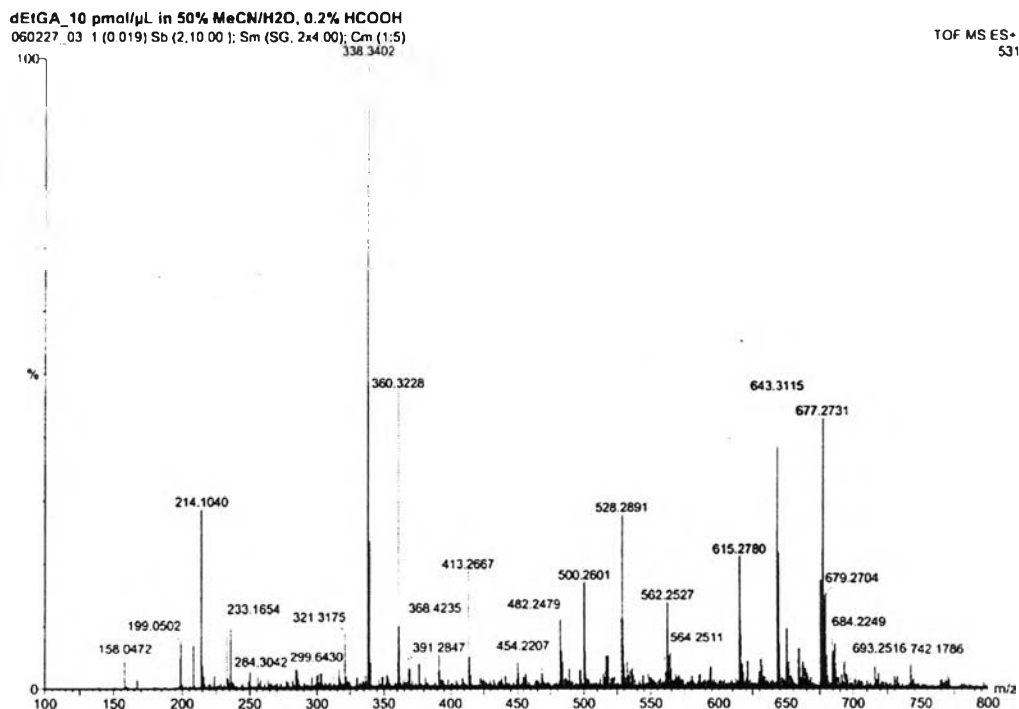


Figure E1. The ESI-Q-TOFMS spectrum of 17,19-di-*O*-ethyl-17-*O*-demethylgeldanamycin (7).

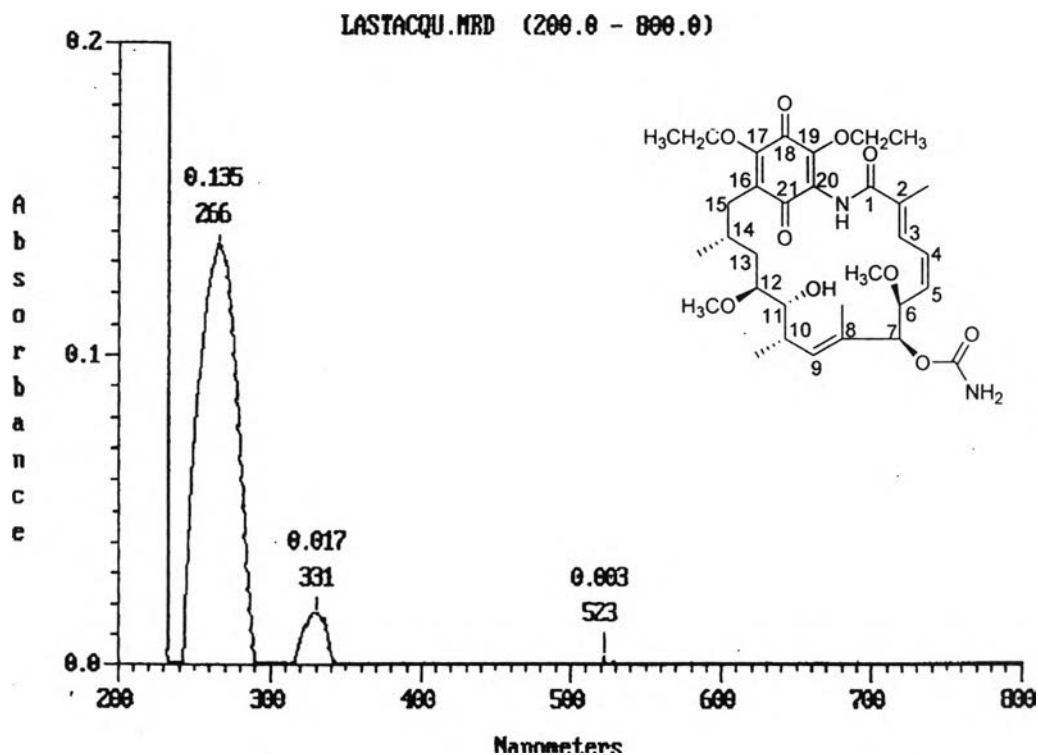


Figure E2. The UV spectrum of 17,19-di-*O*-ethyl-17-*O*-demethylgeldanamycin (7).

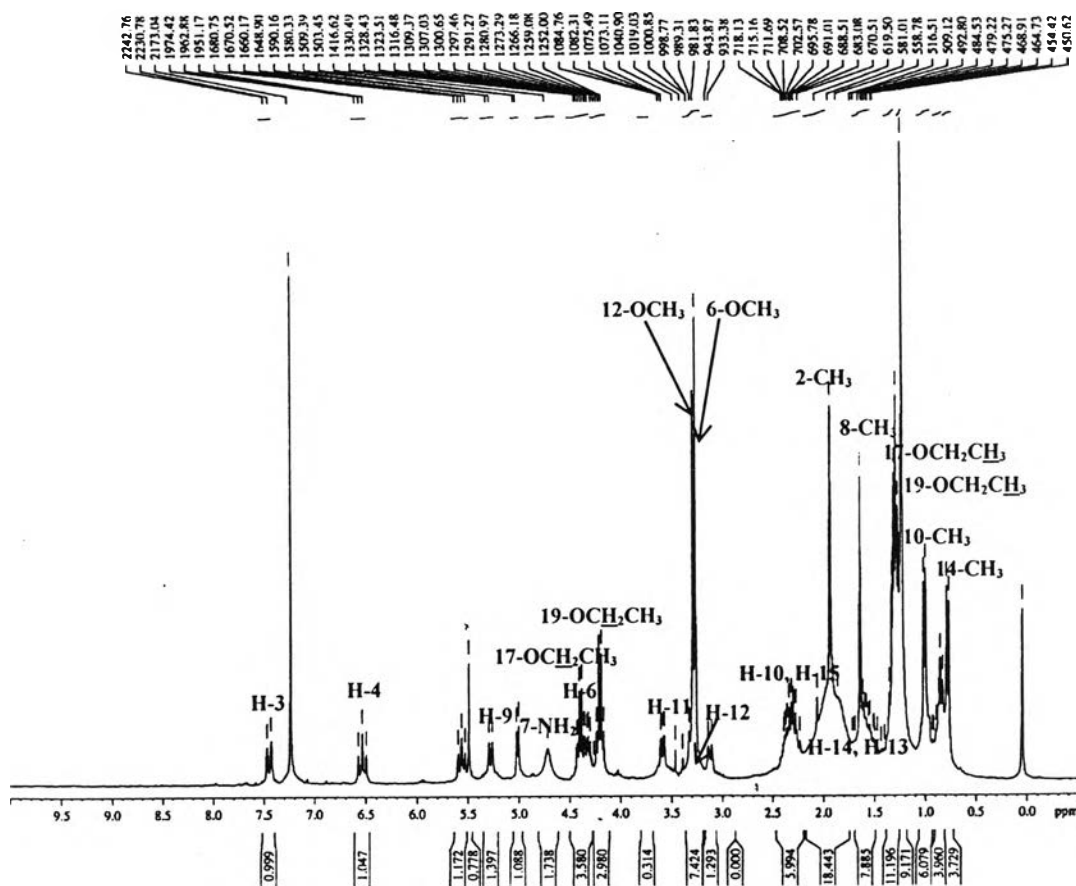
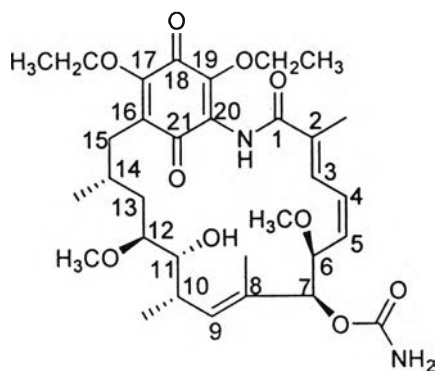


Figure E3. The 300 MHz ^1H -NMR spectrum of 17,19-di-*O*-ethyl-17-*O*-demethylgeldanamycin (7).



17,19-di-*O*-ethyl-17-*O*-demethylgeldanamycin (7)

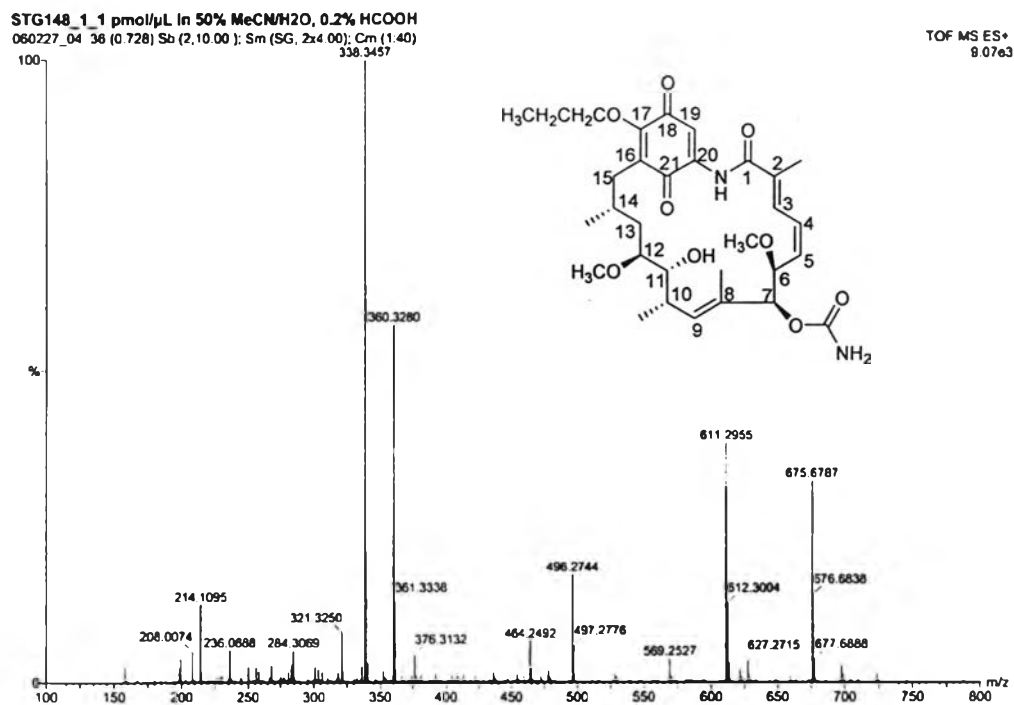


Figure F1. The ESI-Q-TOFMS spectrum of 17-*O*-*n*-propyl-17-*O*-demethylgeldanamycin (8).

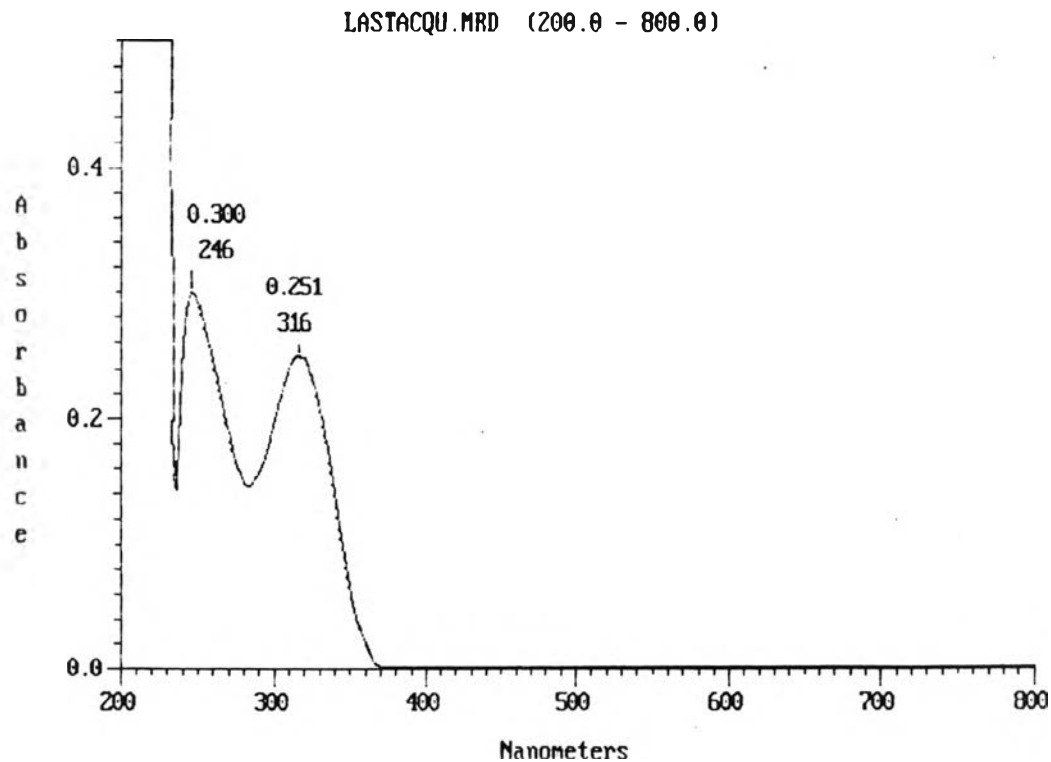


Figure F2. The UV spectrum of 17-*O*-*n*-propyl-17-*O*-demethylgeldanamycin (8).

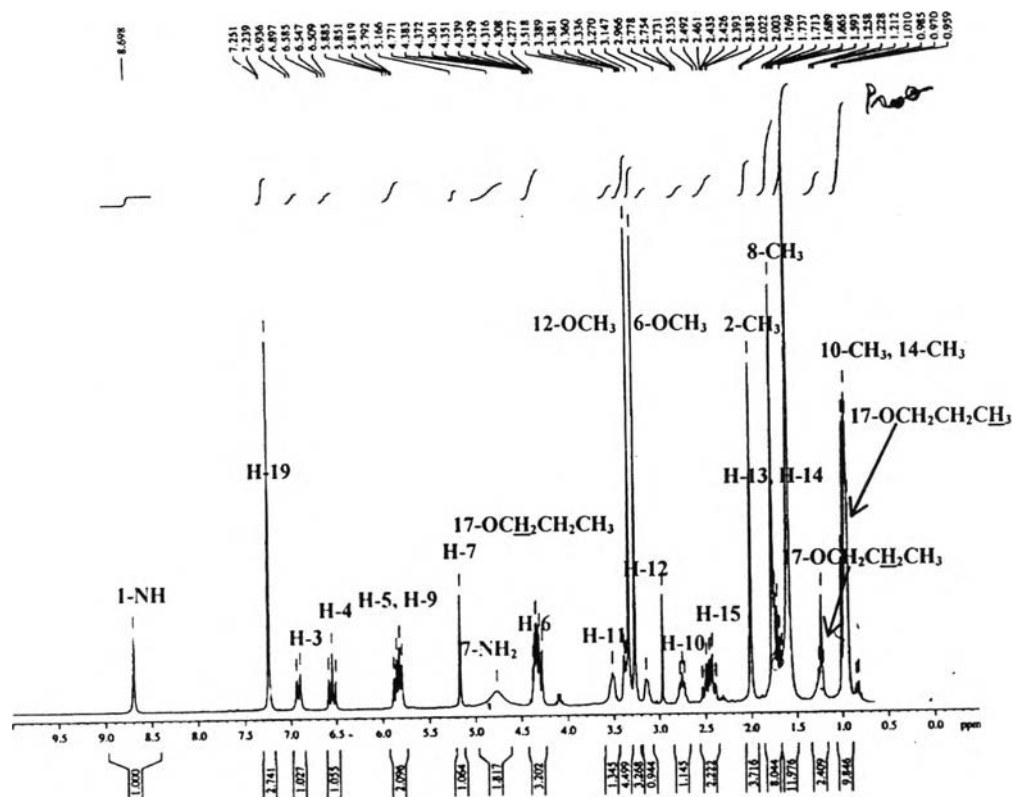


Figure F3. The 300 MHz ^1H -NMR spectrum of 17-*O*-*n*-propyl-17-*O*-demethylgeldanamycin (8).

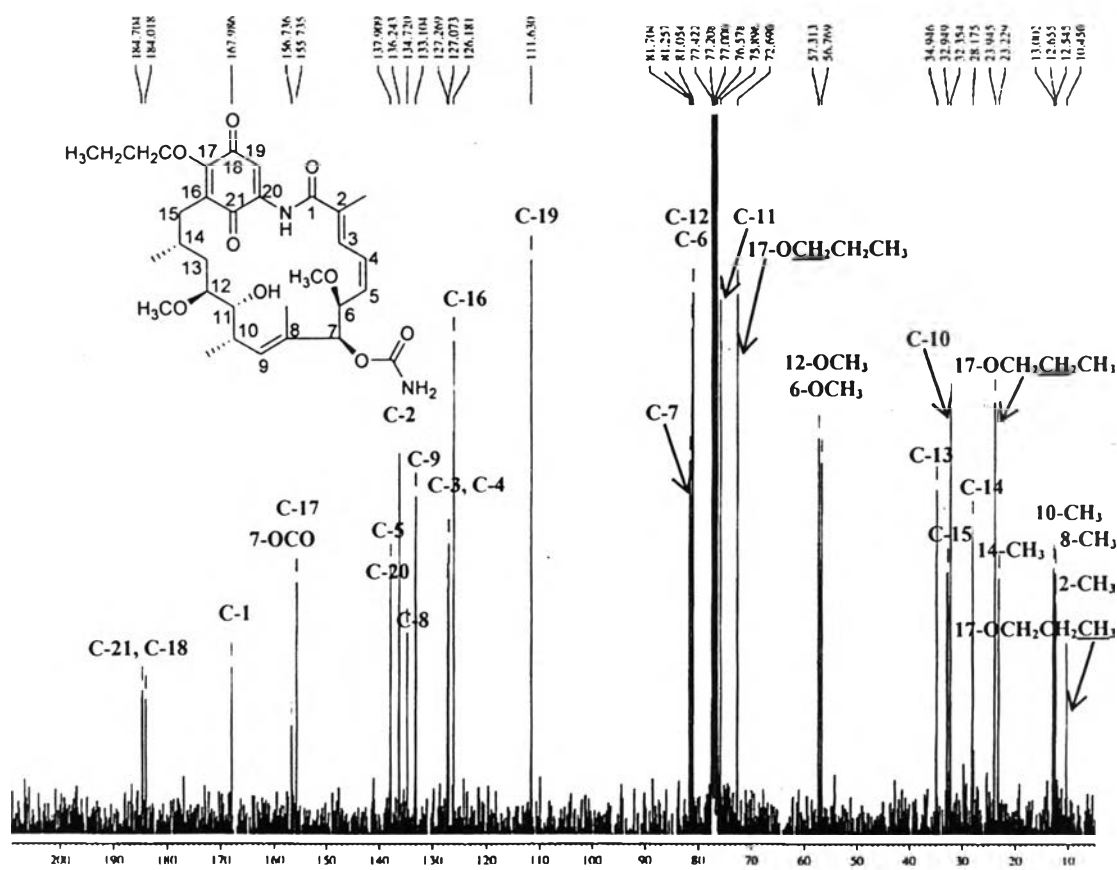


Figure F4. The 75 MHz ^{13}C -NMR spectrum of 17-*O*-*n*-propyl-17-*O*-demethylgeldanamycin (8).

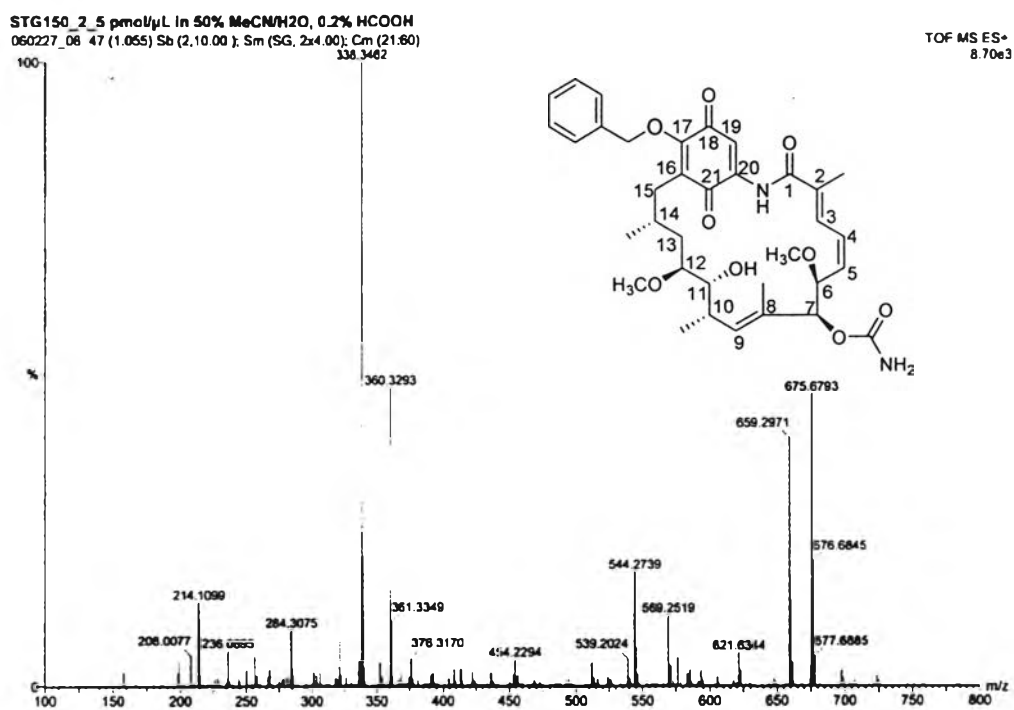


Figure G1. The ESI-Q-TOFMS spectrum of 17-*O*-benzyl-17-*O*-demethylgeldanamycin (9).

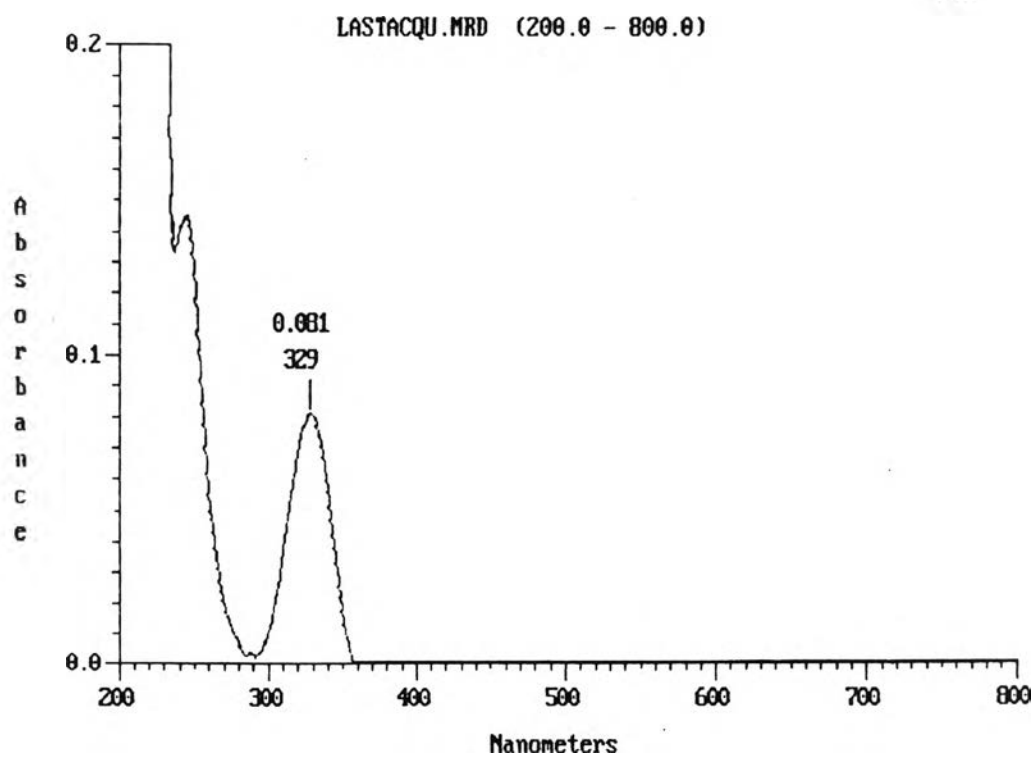


Figure G2. The UV spectrum of 17-*O*-benzyl-17-*O*-demethylgeldanamycin (9).

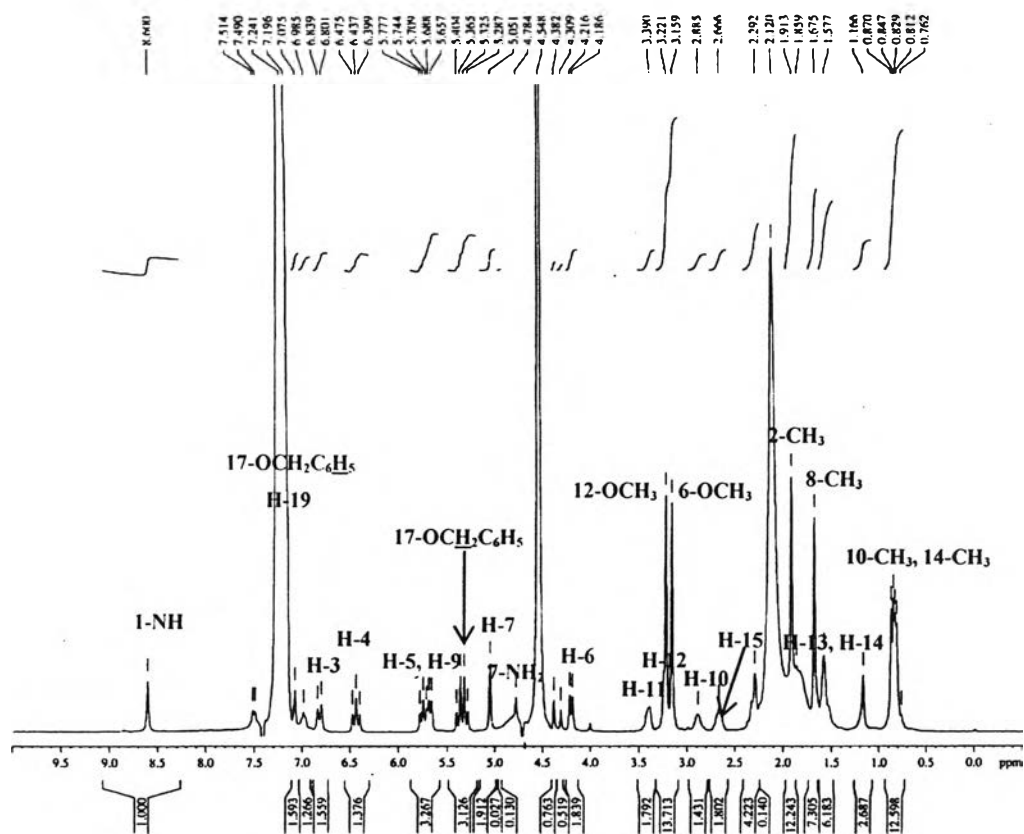


Figure G3. The 300 MHz ^1H -NMR spectrum of 17-*O*-benzyl-17-*O*-demthylgeldanamycin (9).

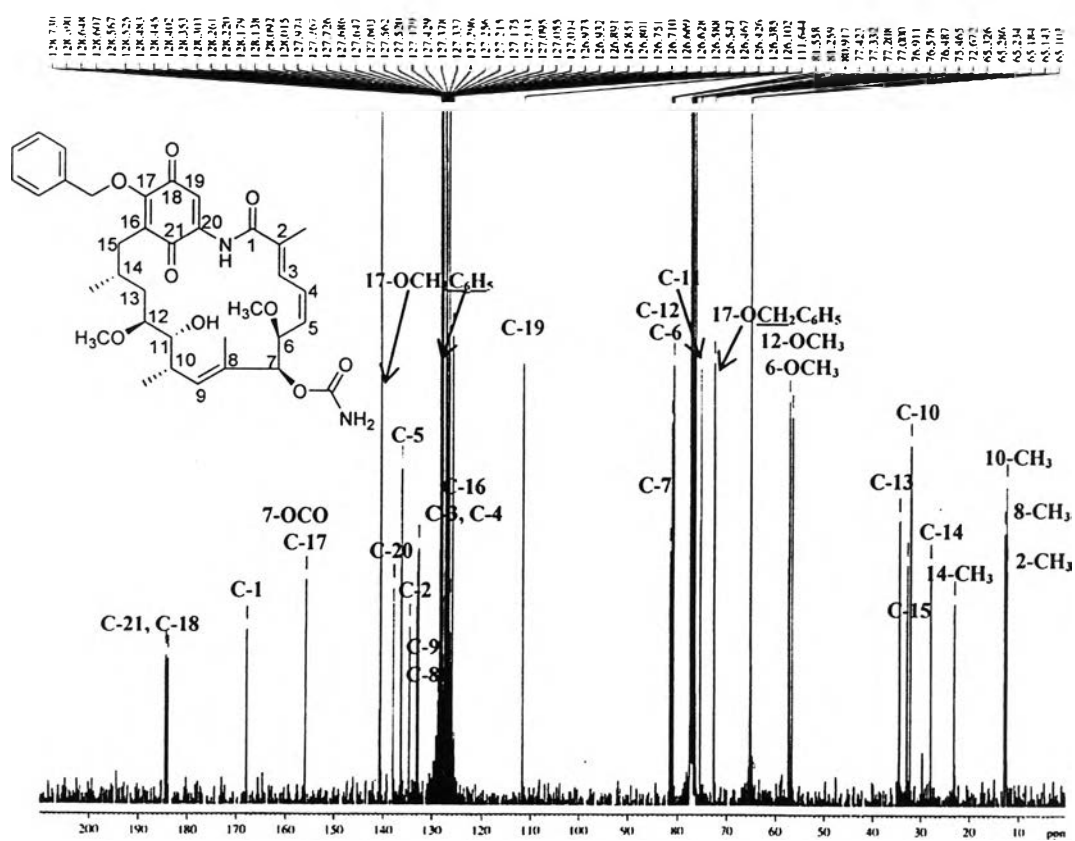


Figure G4. The 75 MHz ^{13}C -NMR spectrum of 17-*O*-benzyl-17-*O*-demthylgeldanamycin (9).

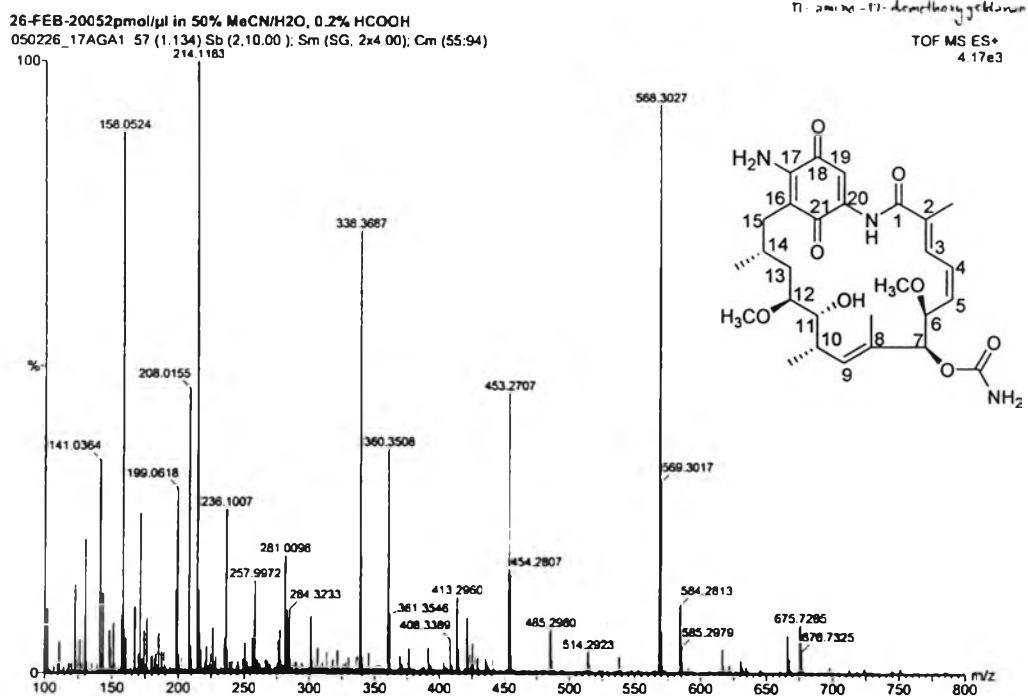


Figure H1. The ESI-Q-TOFMS spectrum of 17-amino-17-demethoxygeldanamycin (10).

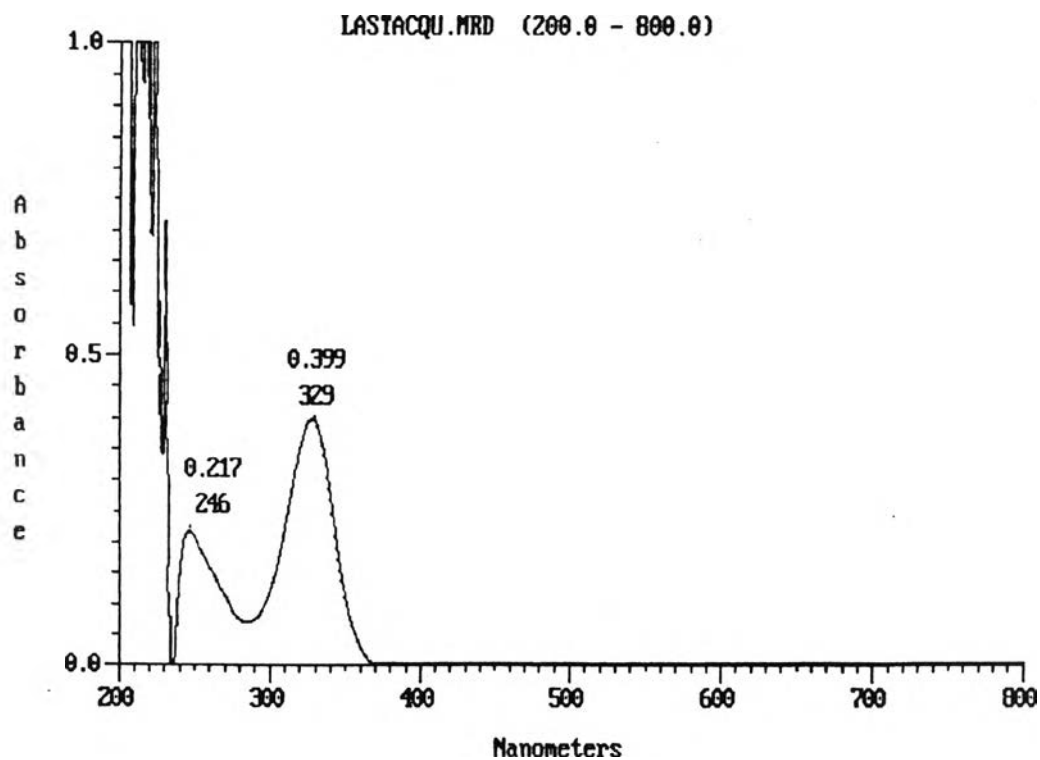


Figure H2. The UV spectrum of 17-amino-17-demethoxygeldanamycin (10).

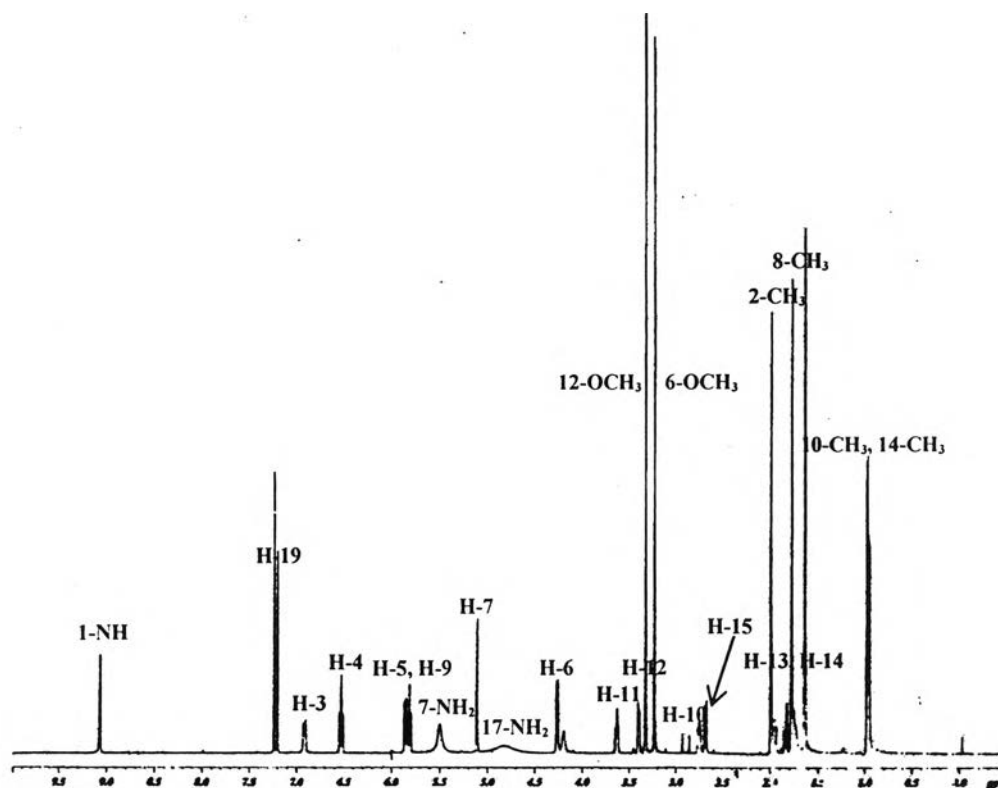


Figure H3. The 600 MHz ^1H -NMR spectrum of 17-amino-17-demethoxygeldanamycin (10).

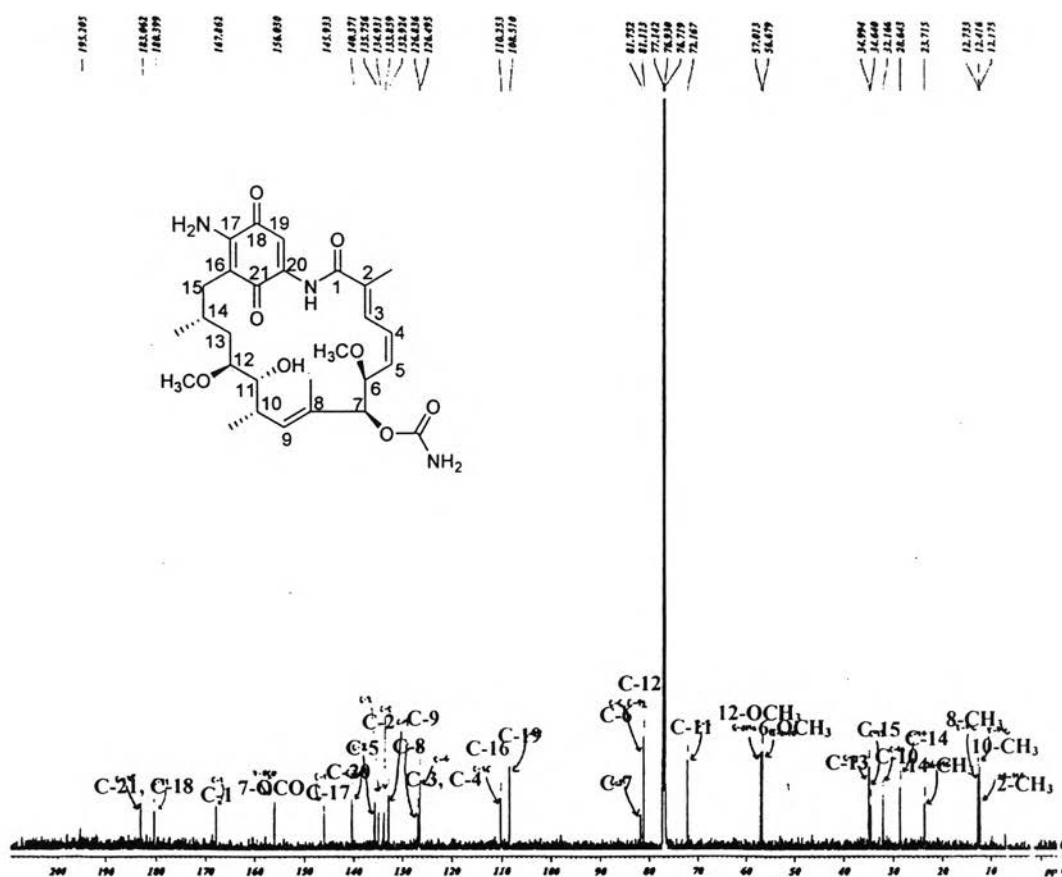


Figure H4. The 150 MHz ^{13}C -NMR spectrum of 17-amino-17-demethoxygeldanamycin (10).

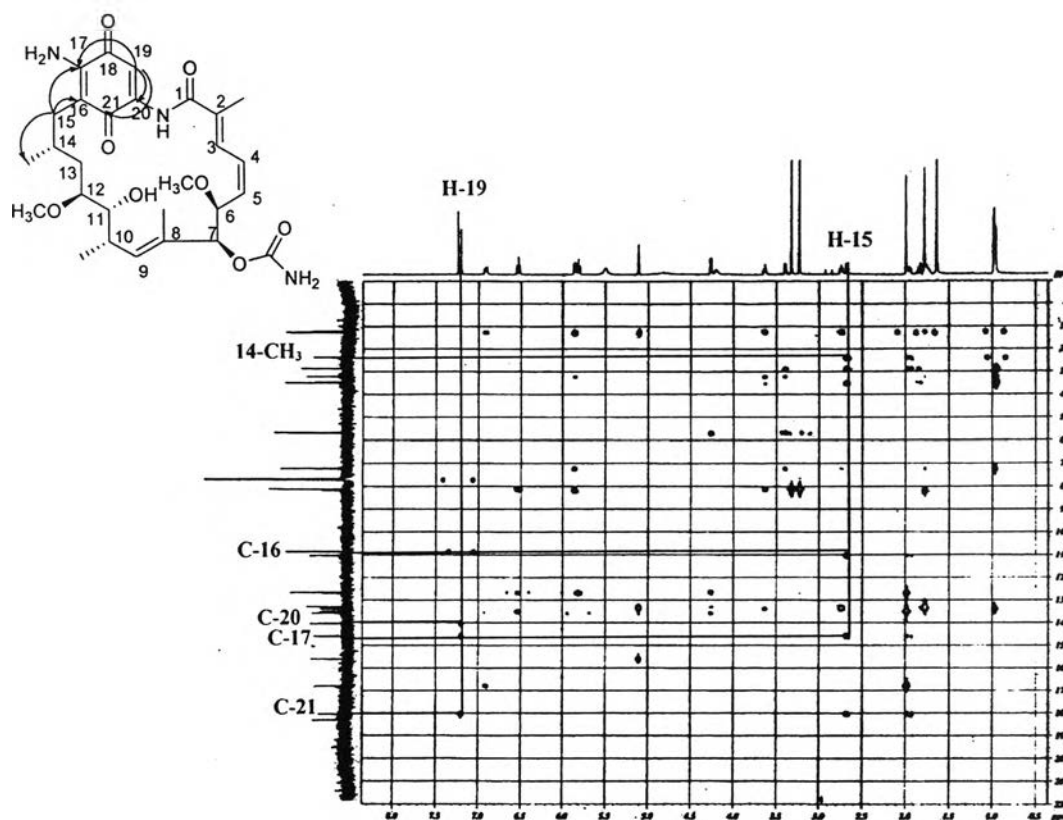
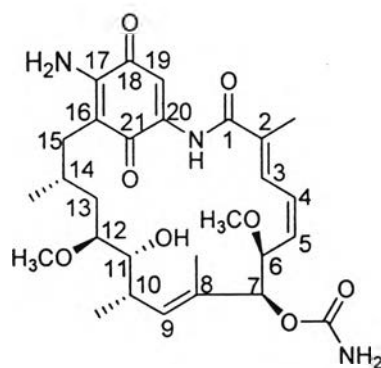


Figure H5. The HMBC spectrum of 17-amino-17-demethoxygeldanamycin (10).



17-amino-17-demethoxygeldanamycin (10)

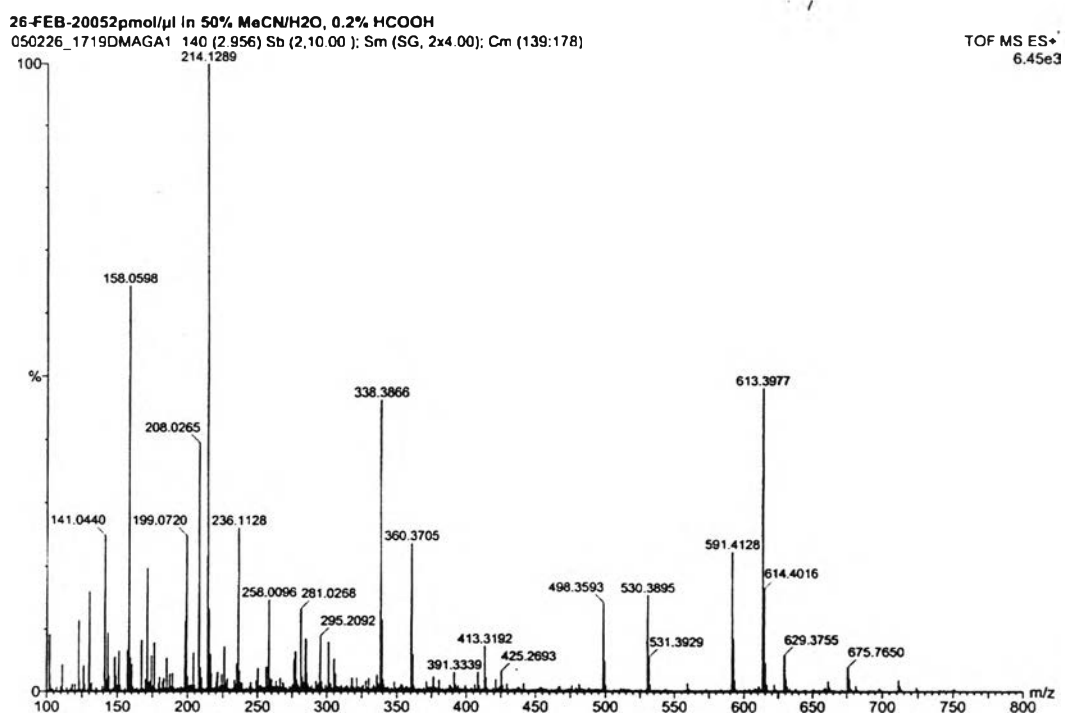


Figure I1. The ESI-Q-TOFMS spectrum of 17,19-di-methylamino-17-demethoxygeldanamycin (11).

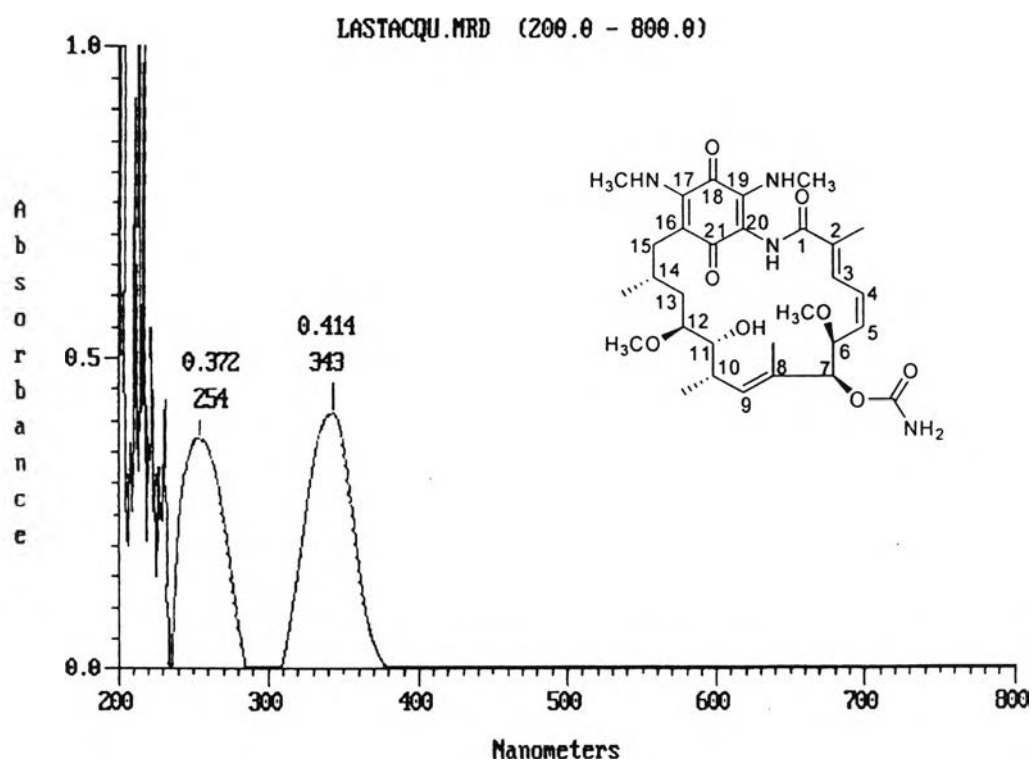


Figure I2. The UV spectrum of 17,19-di-methylamino-17-demethoxygeldanamycin (11).

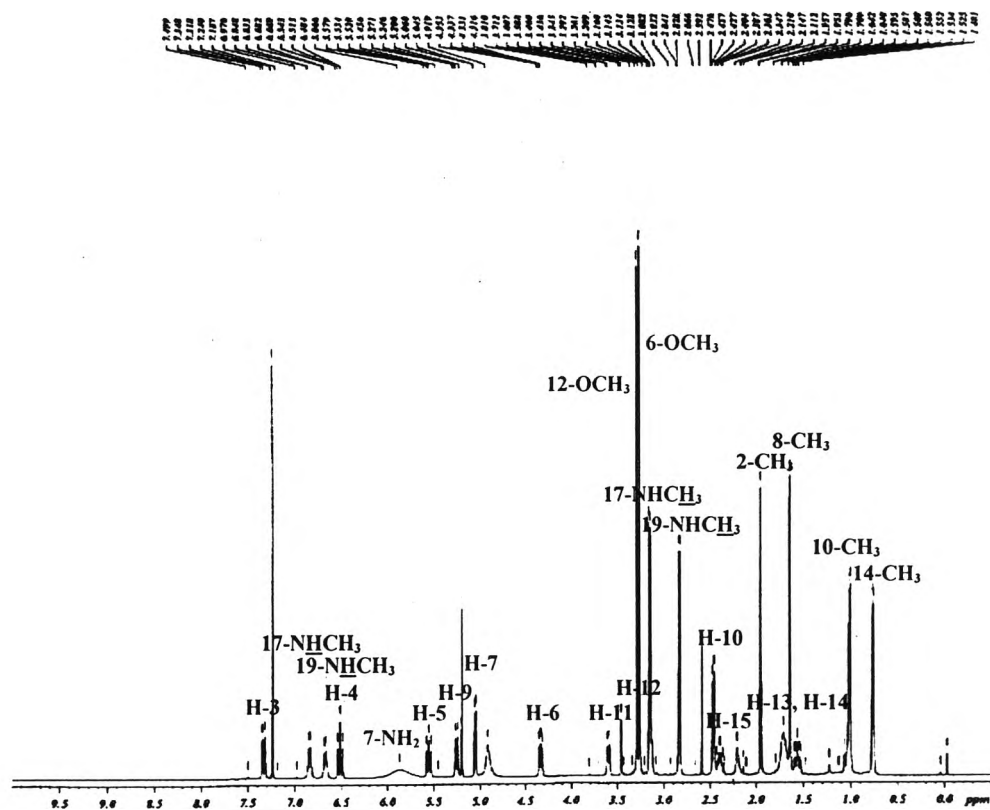


Figure 13. The 400 MHz $^1\text{H-NMR}$ spectrum of 17,19-di-methylamino-17-demethoxygeldanamycin (11).

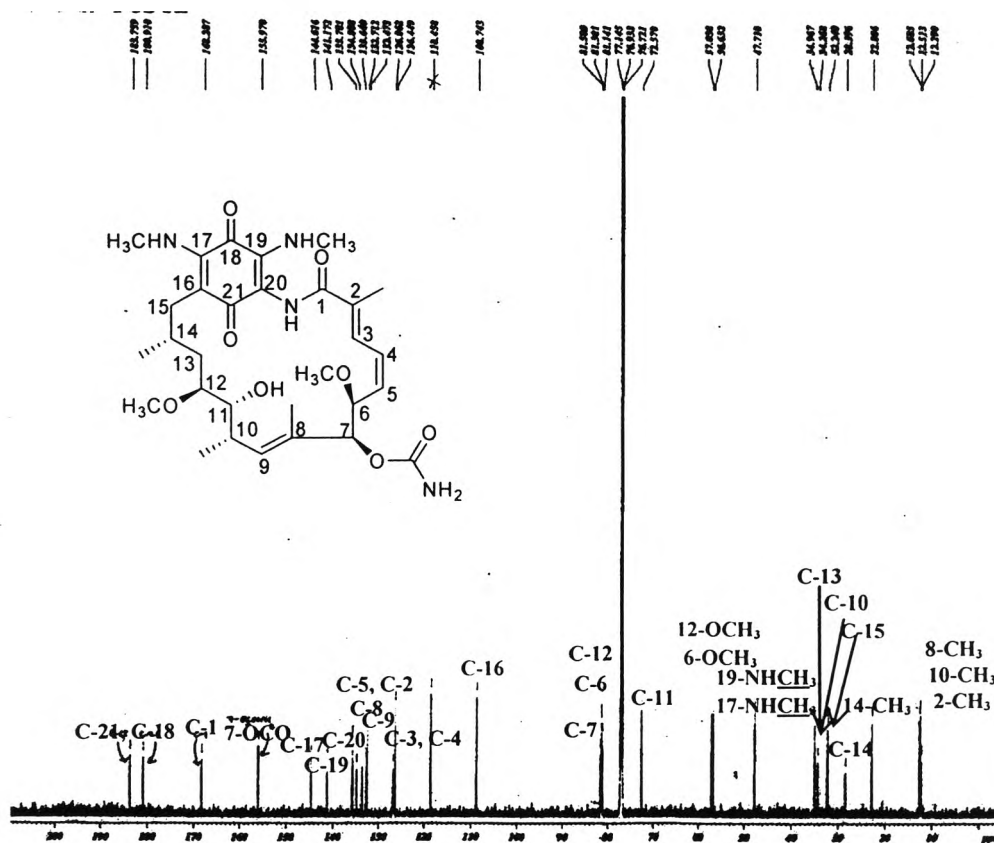


Figure 14. The 150 MHz $^{13}\text{C-NMR}$ spectrum of 17,19-di-methylamino-17-demethoxygeldanamycin (11).

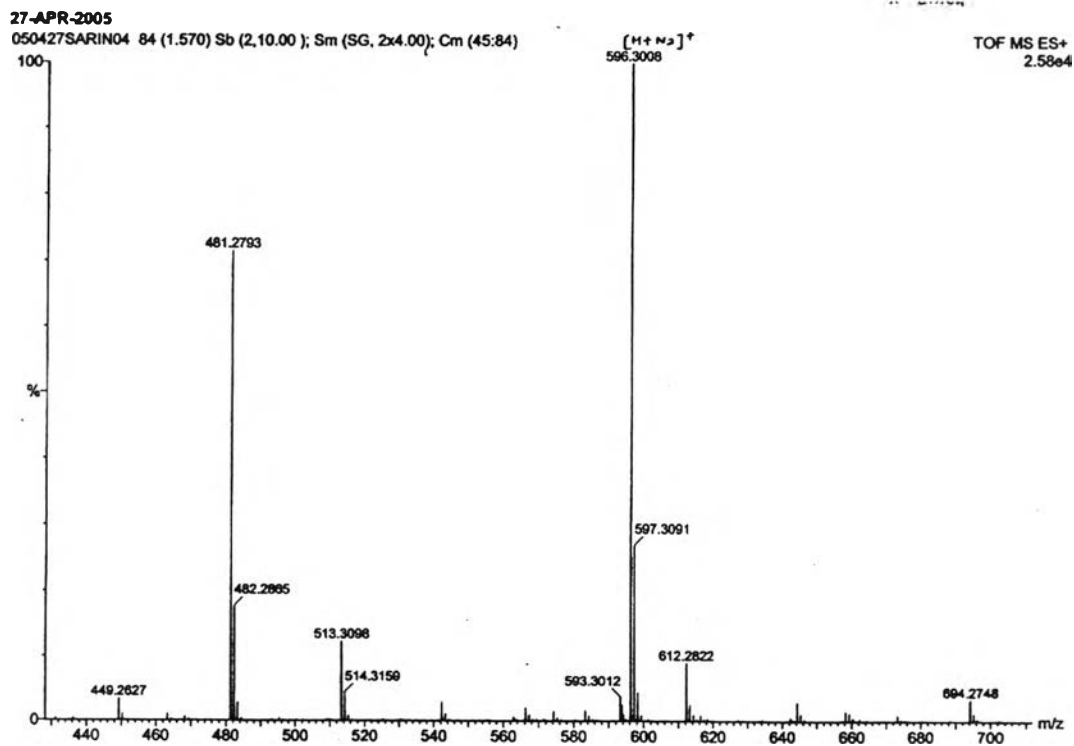


Figure J1. The ESI-Q-TOFMS spectrum of 17-ethylamino-17-demethoxygeldanamycin (12).

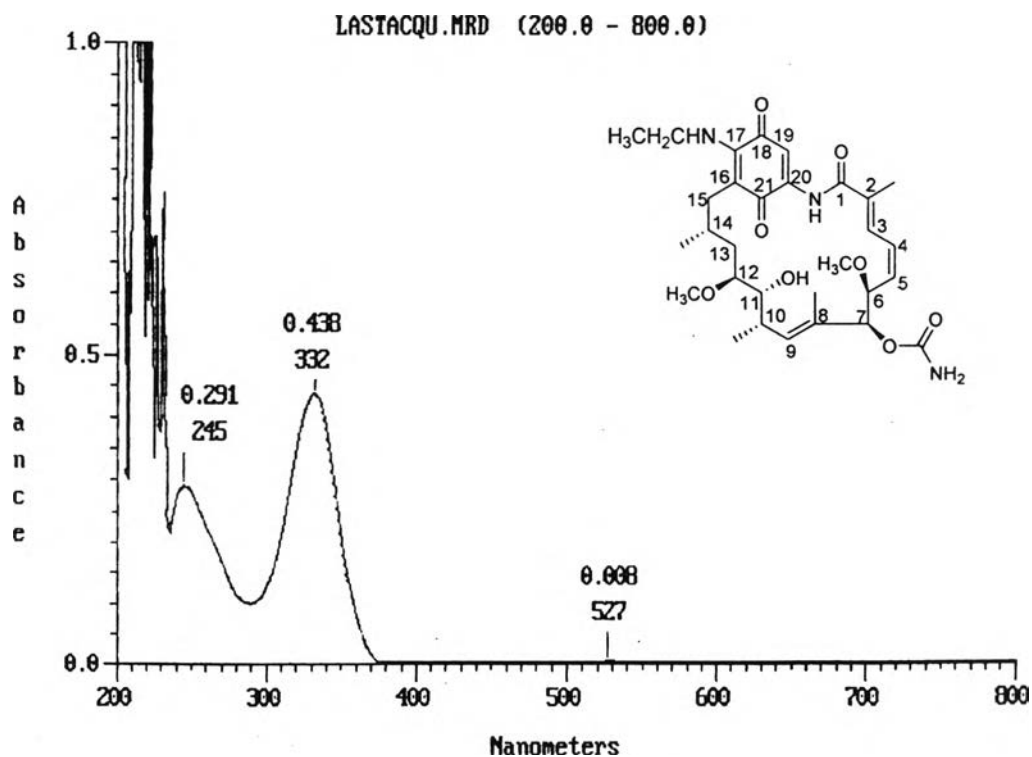


Figure J2. The UV spectrum of 17-ethylamino-17-demethoxygeldanamycin (12).

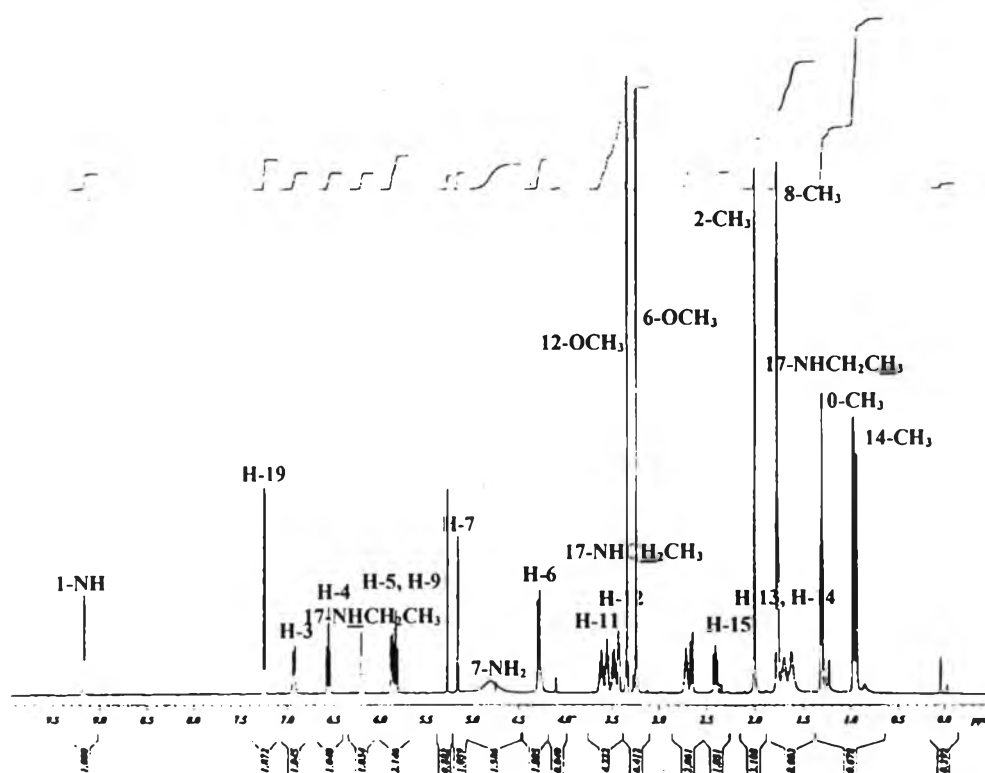


Figure J3. The 600 MHz ^1H -NMR spectrum of 17-ethylamino-17-demethoxygeldanamycin (12).

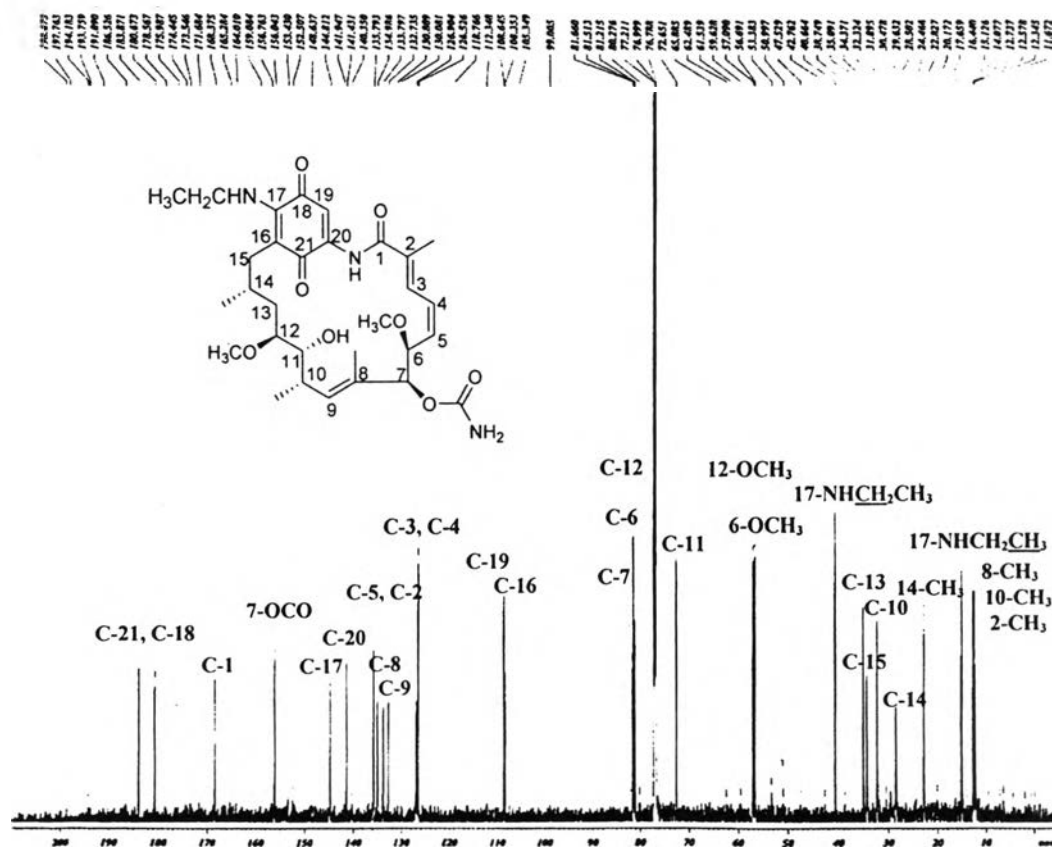


Figure J4. The 150 MHz ^{13}C -NMR spectrum of 17-ethylamino-17-demethoxygeldanamycin (12).

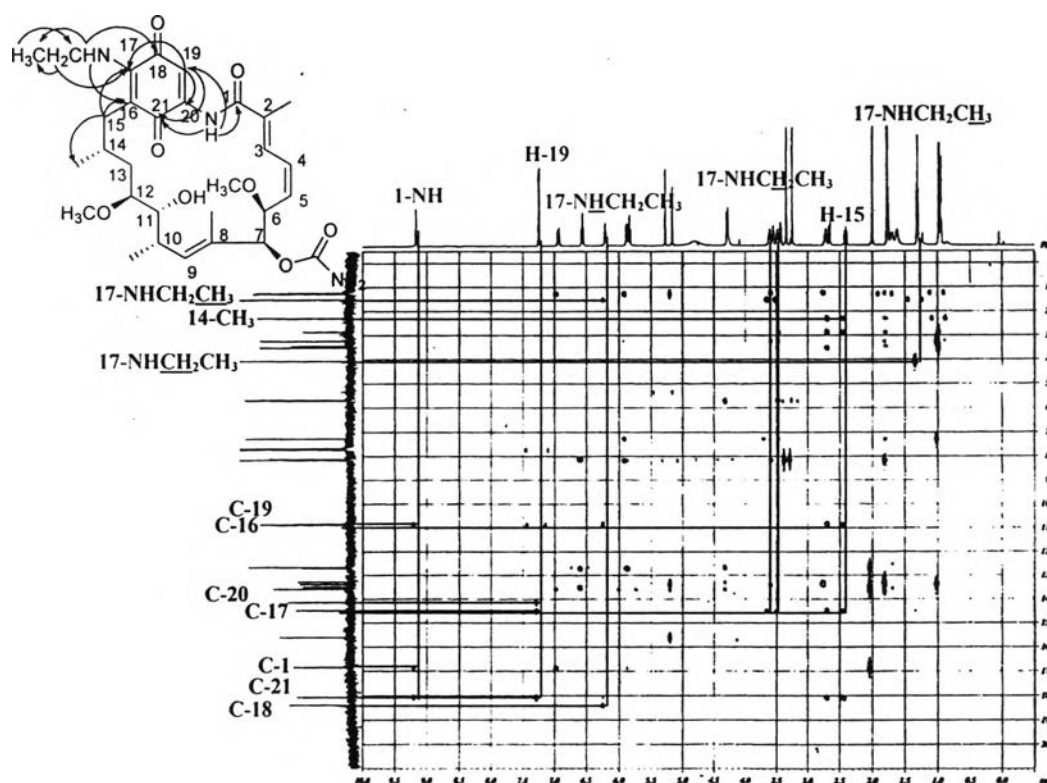
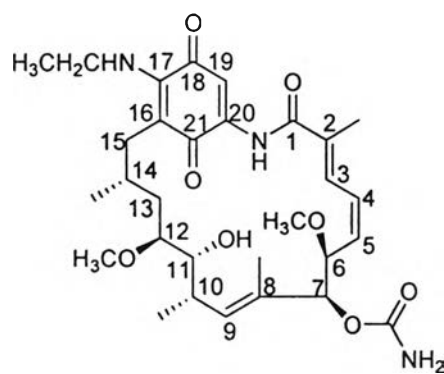


Figure J5. The HMBC spectrum of 17-ethylamino-17-demethoxygeldanamycin (12).



17-ethylamino-17-demethoxygeldanamycin (12)

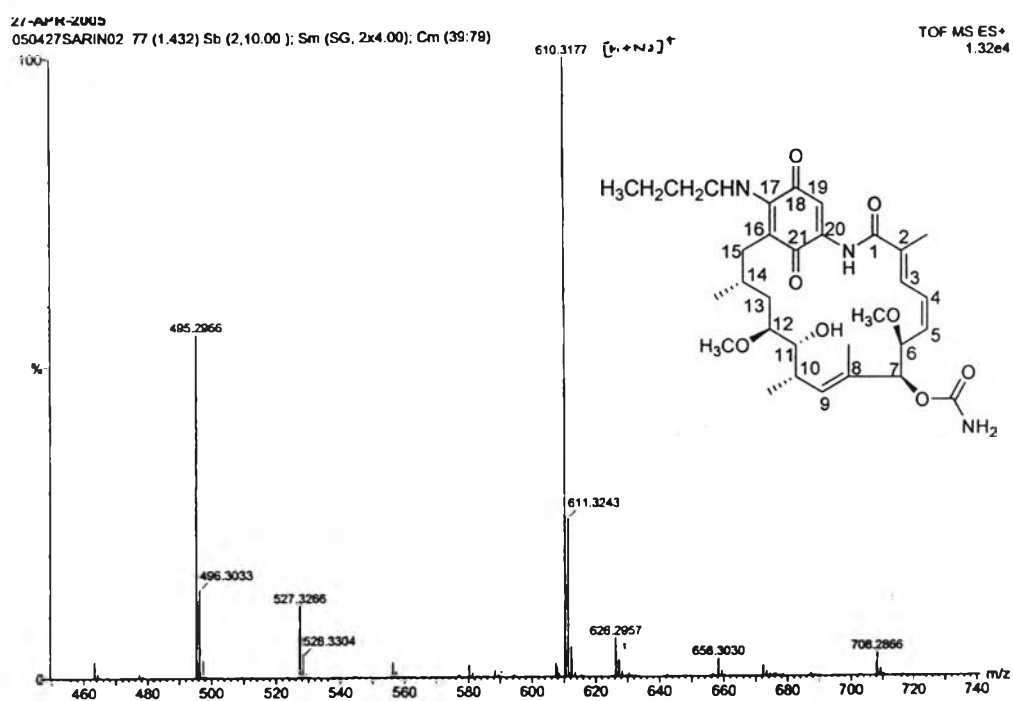


Figure K1. The ESI-Q-TOFMS spectrum of 17-n-propylamino-17-demethoxygeldanamycin (13).

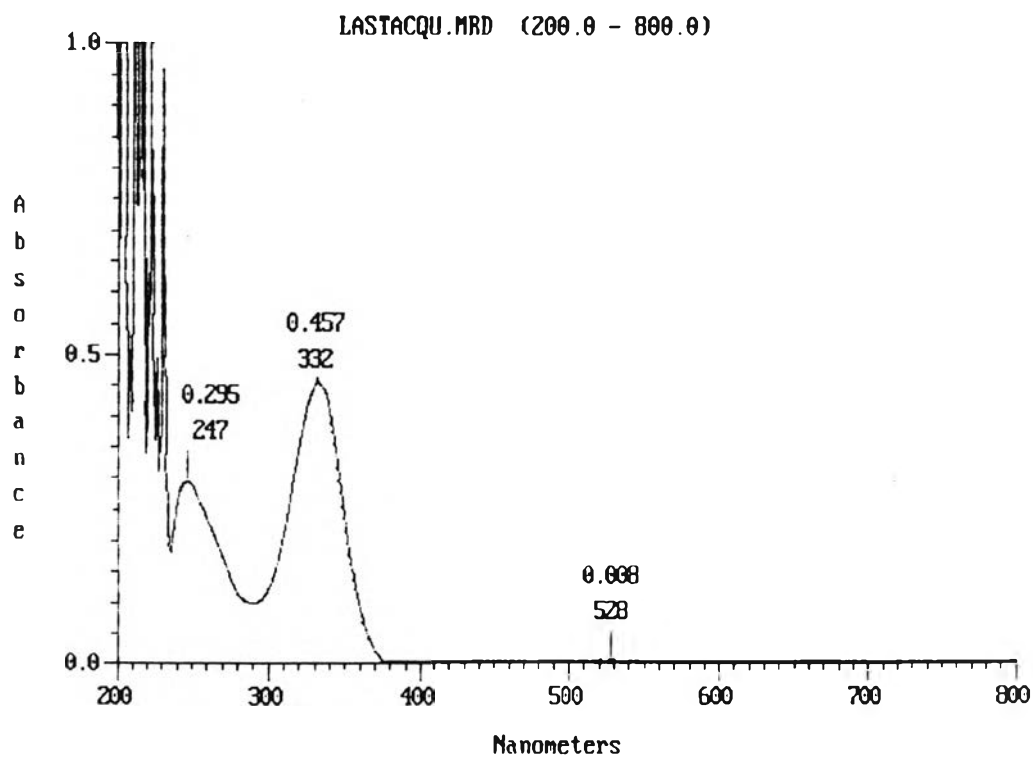


Figure K2. The UV spectrum of 17-n-propylamino-17-demethoxygeldanamycin (13).

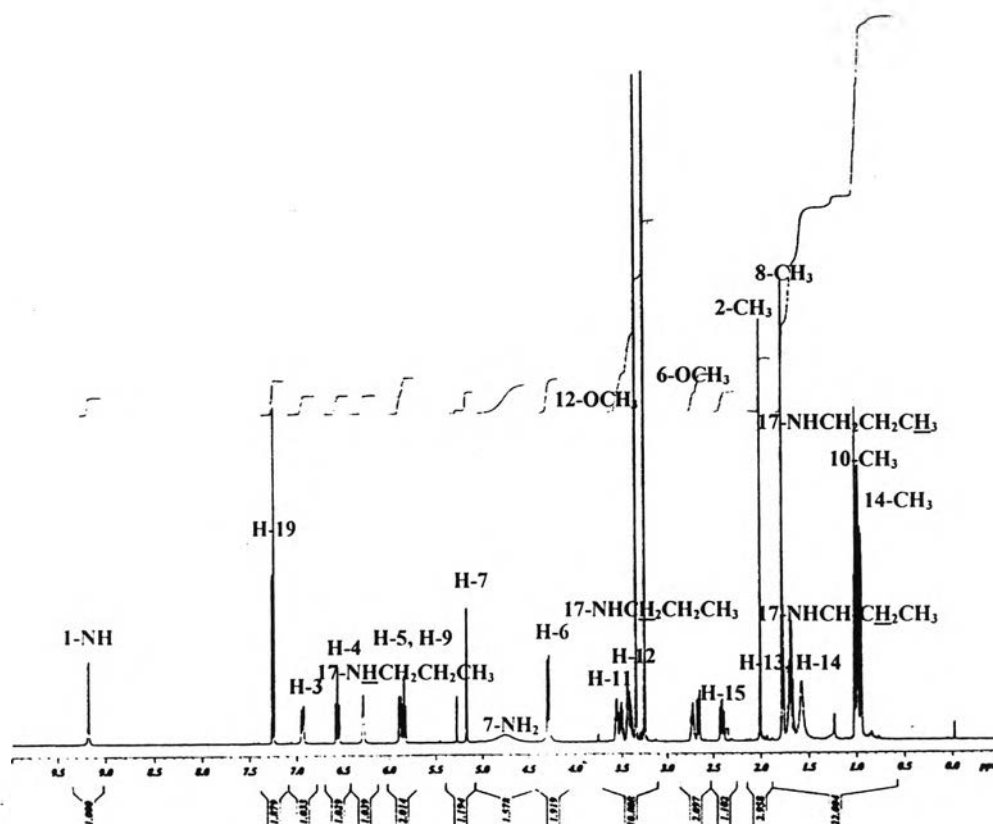


Figure K3. The 600 MHz ^1H -NMR spectrum of 17-n-propylamino-17-demethoxygeldanamycin (13).

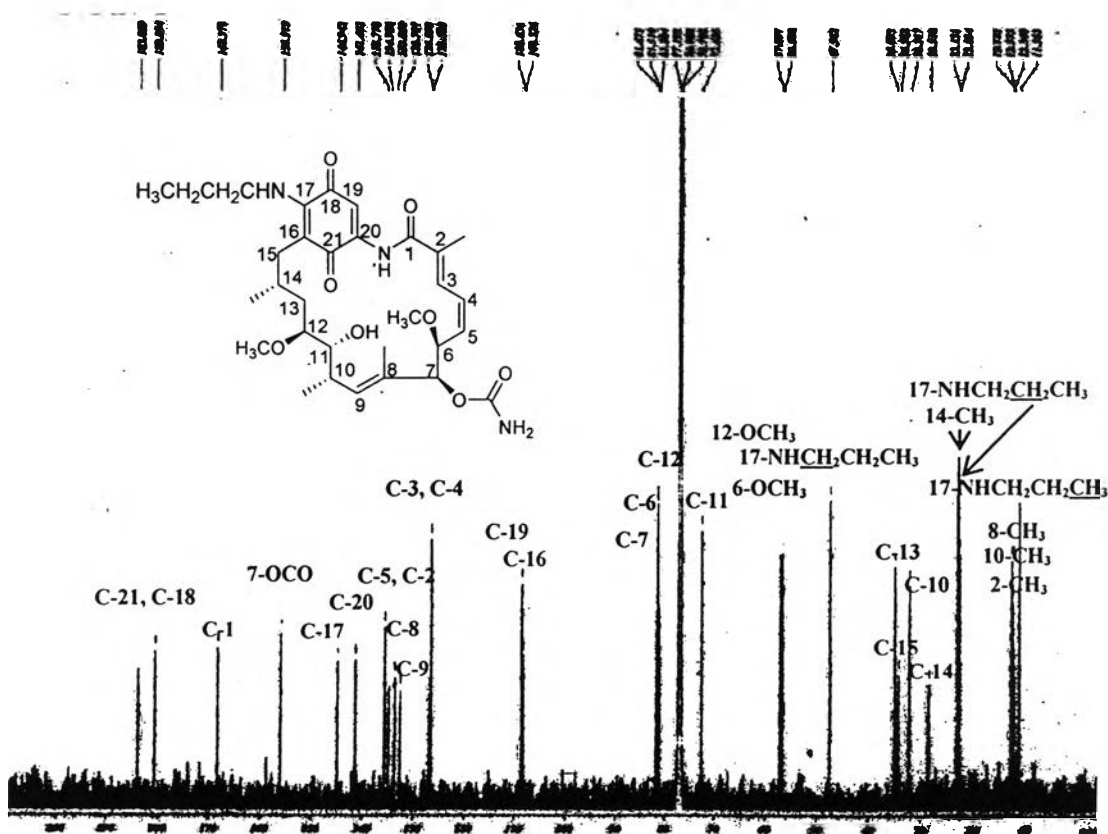


Figure K4. The 150 MHz ^{13}C -NMR spectrum of 17-n-propylamino-17-demethoxygeldanamycin (13).

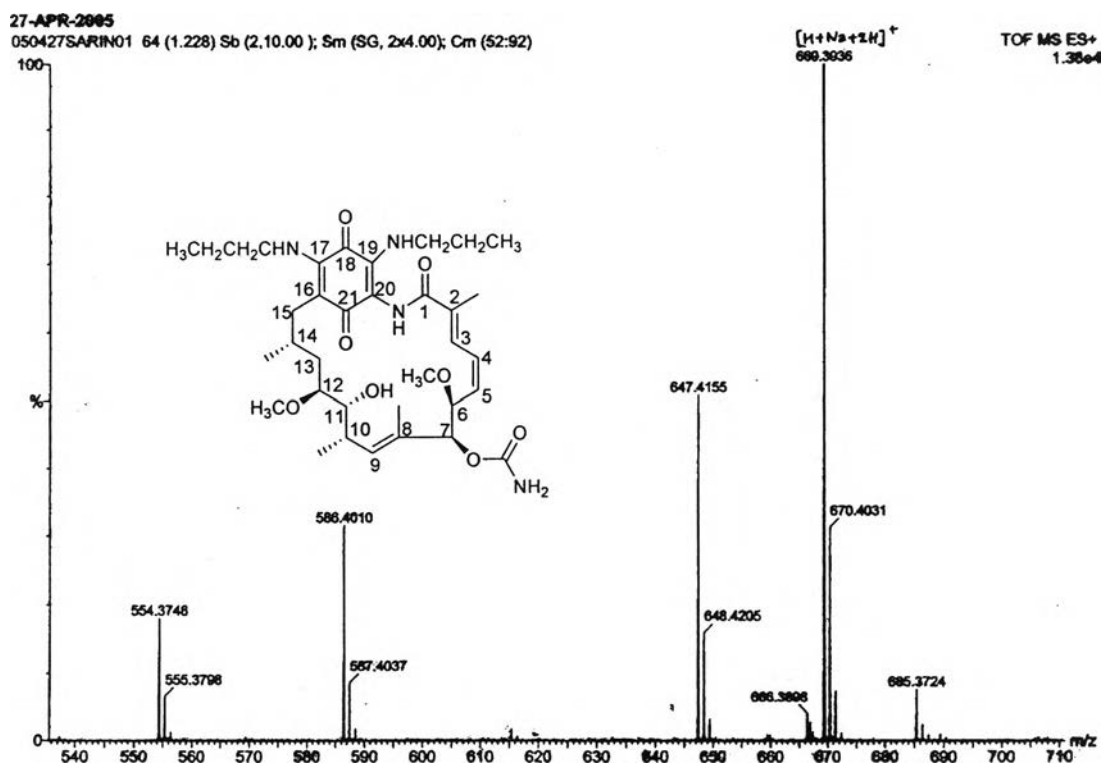


Figure L1. The ESI-Q-TOFMS spectrum of 17,19-di-n-propylamino-17-demethoxygeldanamycin (14).

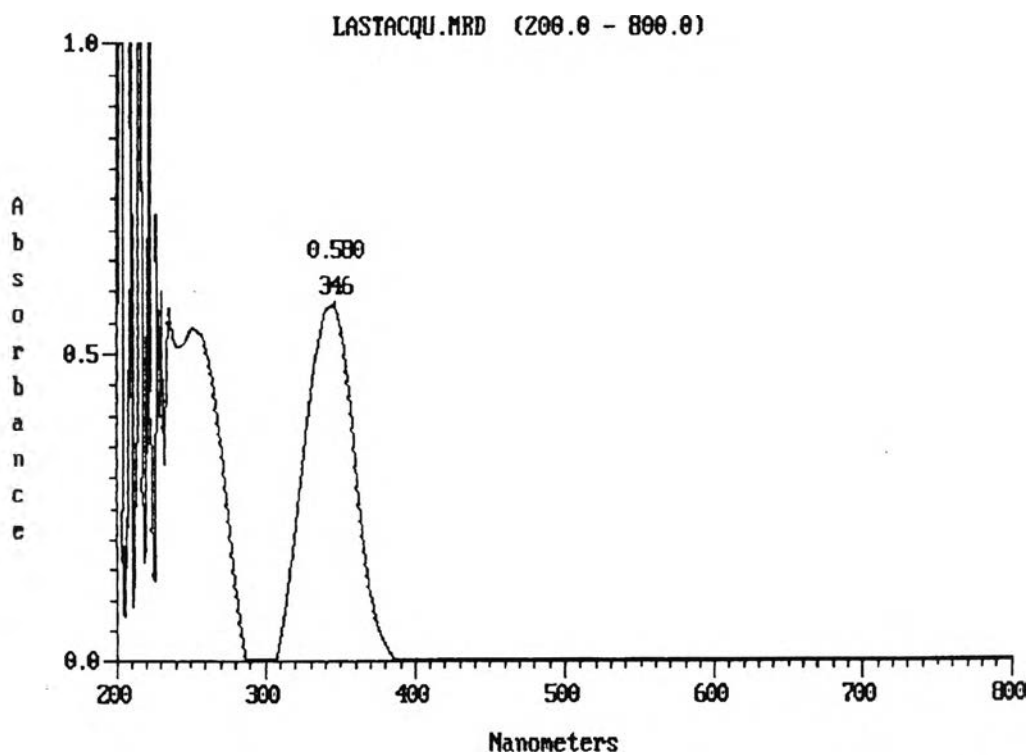


Figure L2. The UV spectrum of 17,19-di-n-propylamino-17-demethoxygeldanamycin (14).

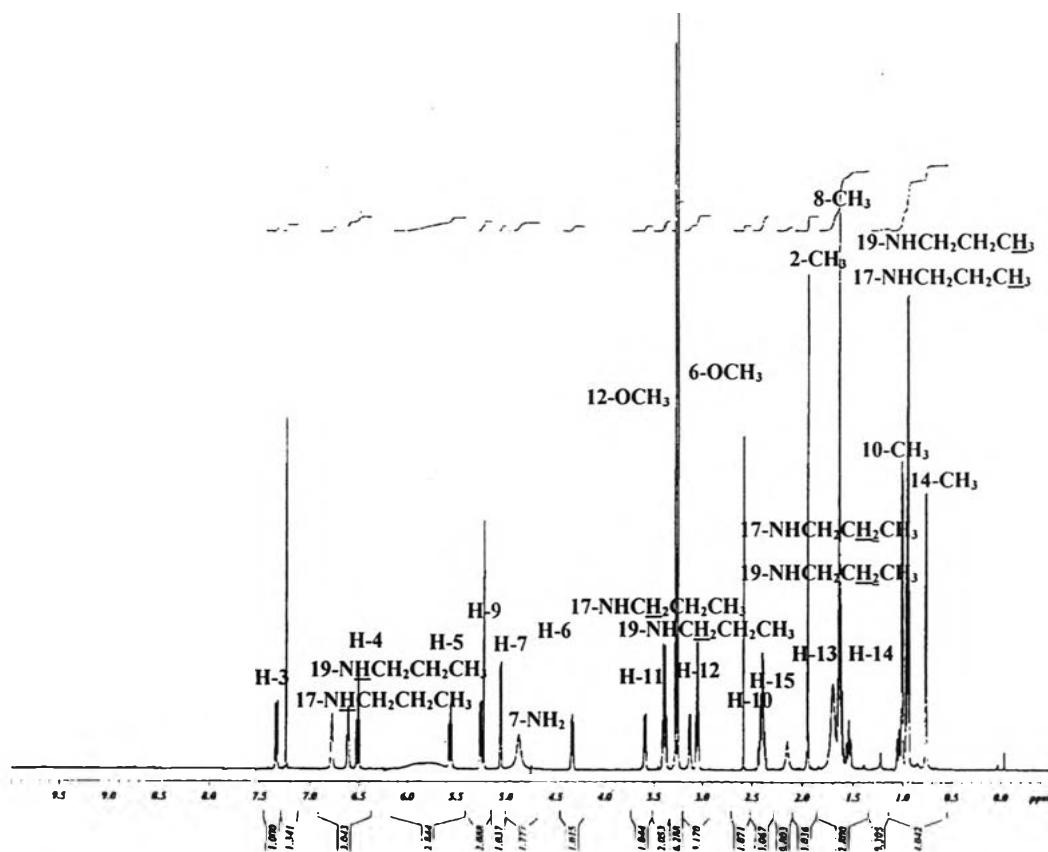


Figure L3. The 600 MHz ^1H -NMR spectrum of 17,19-di-n-propylamino-17-demethoxygeldanamycin (14).

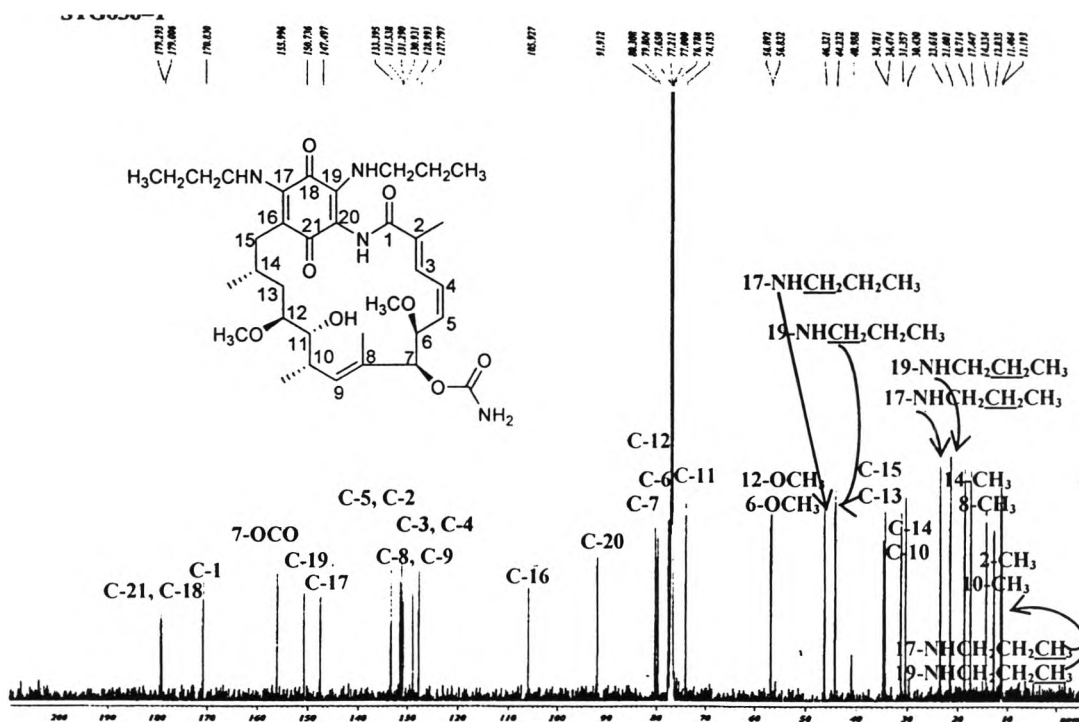


Figure L4. The 150 MHz ^{13}C -NMR spectrum of 17,19-di-n-propylamino-17-demethoxygeldanamycin (14).

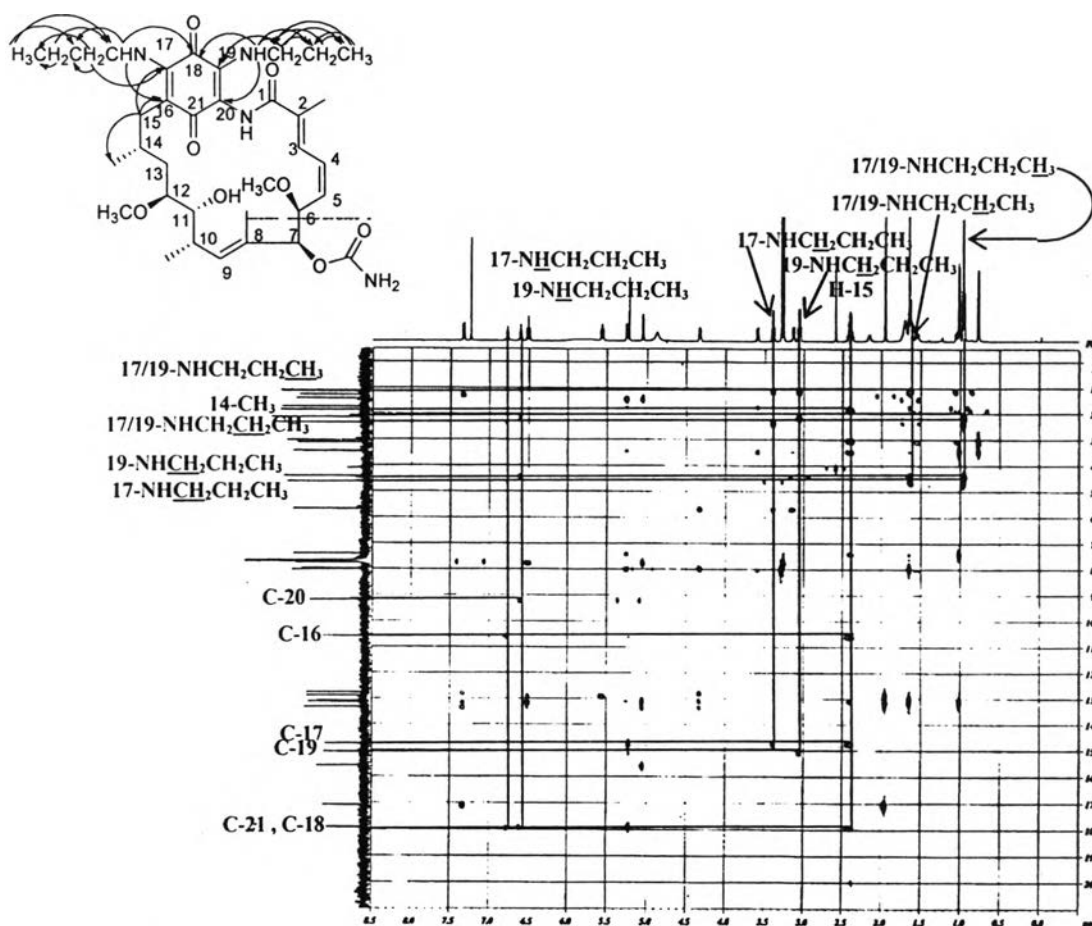
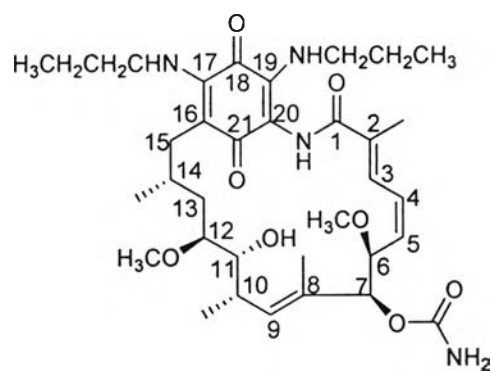


Figure L5. The HMBC spectrum of 17,19-di-n-propylamino-17-demethoxygeldanamycin (14).



17,19-di-n-propylamino-17-demethoxygeldanamycin (14)

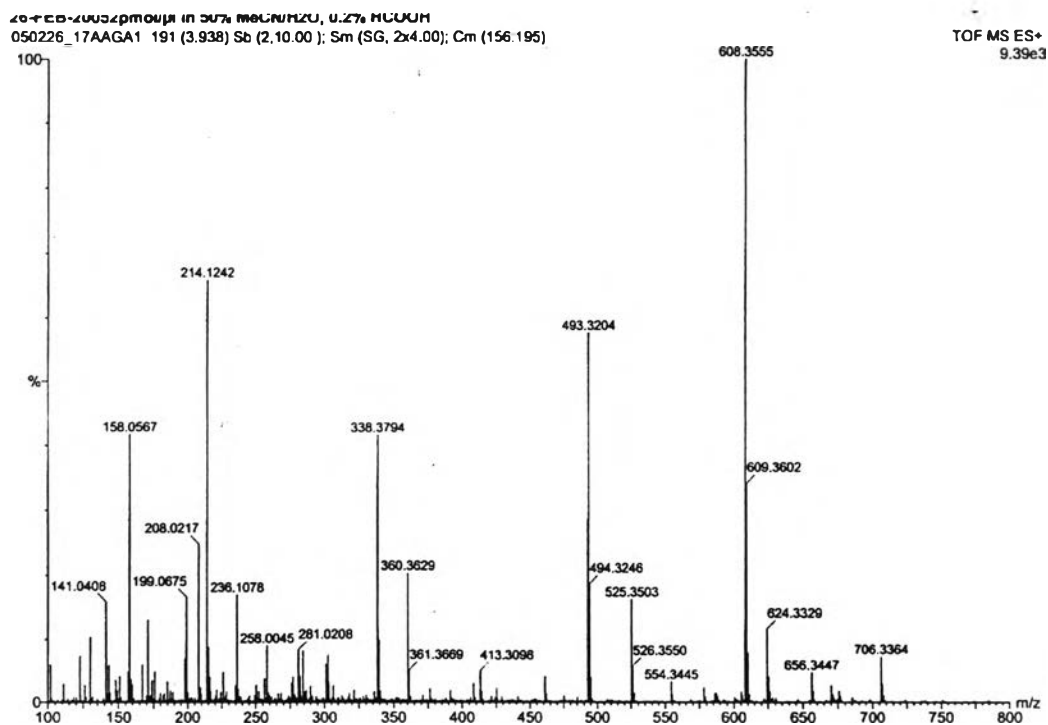


Figure M1. The ESI-Q-TOFMS spectrum of 17-allylamino-17-demethoxygeldanamycin (15).

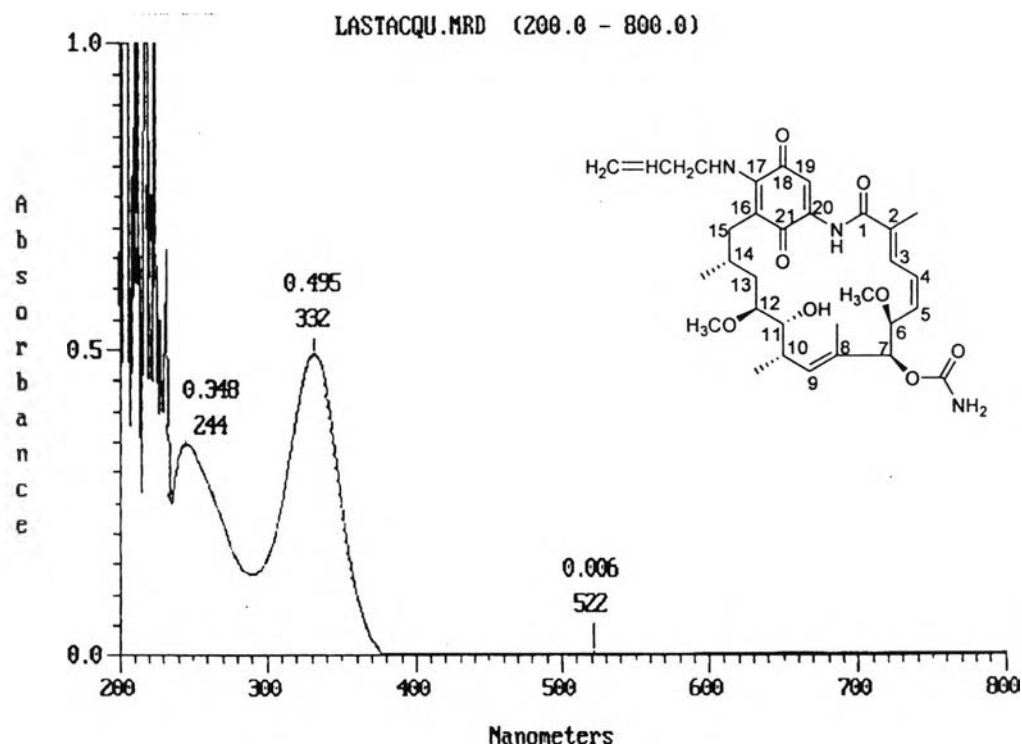


Figure M2. The UV spectrum of 17-allylamino-17-demethoxygeldanamycin (15).

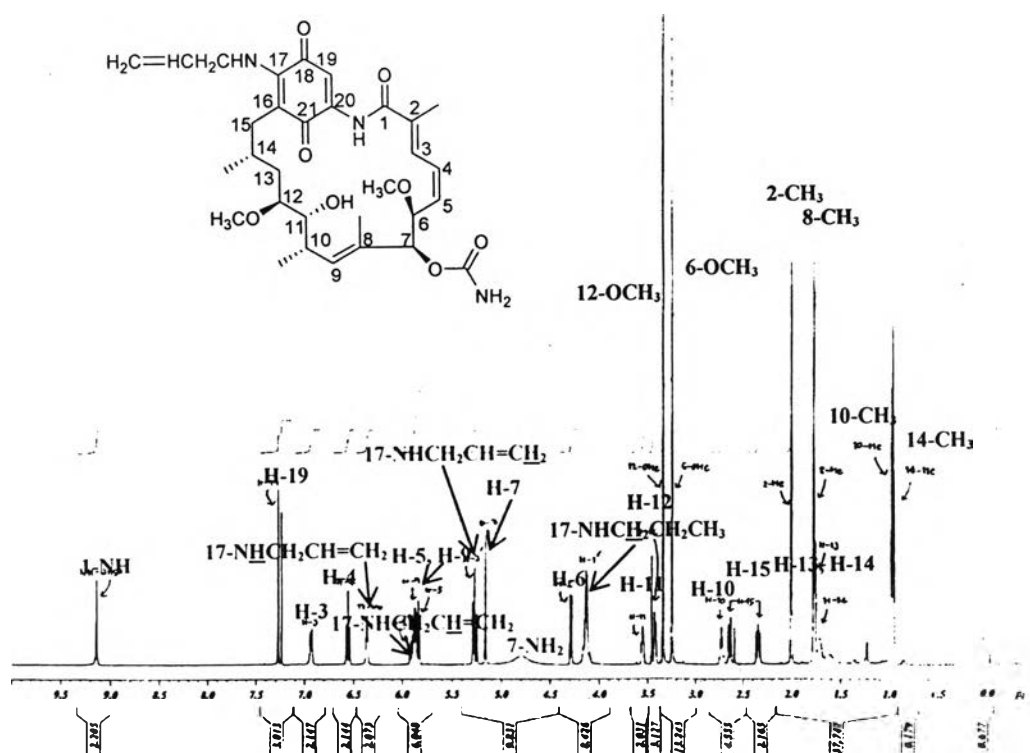


Figure M3. The 600 MHz ^1H -NMR spectrum of 17-allylamino-17-demethoxygeldanamycin (15).

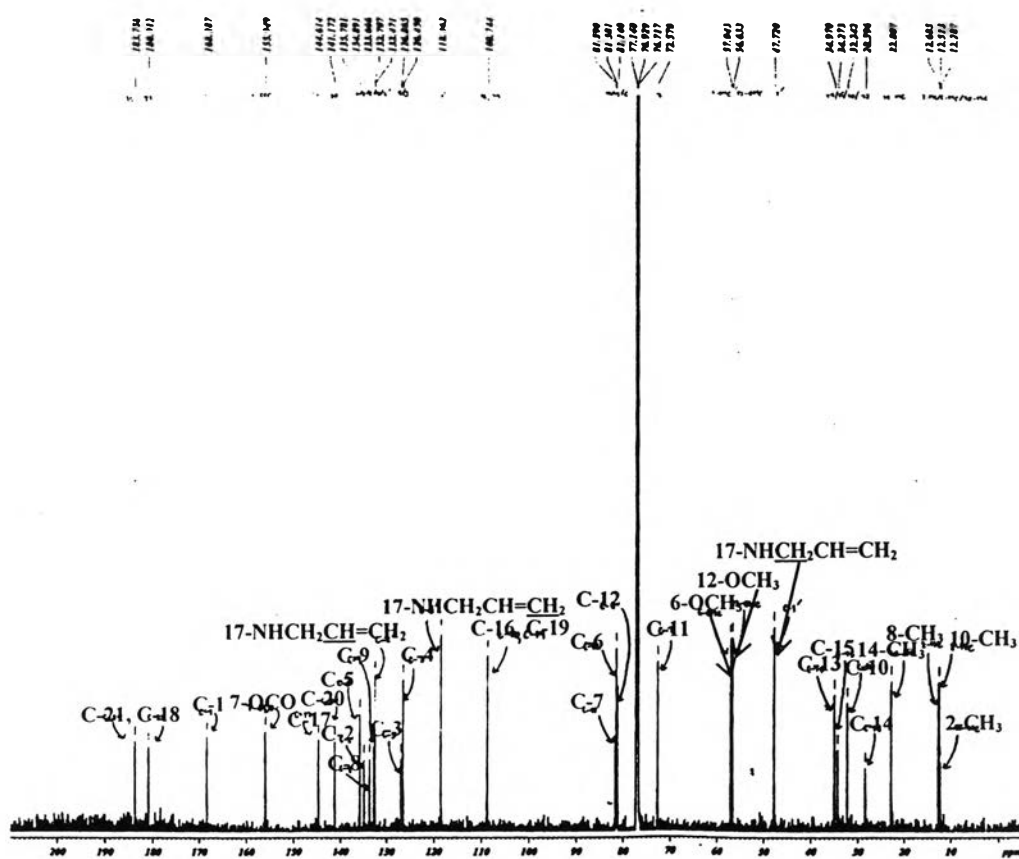


Figure M4. The 150 MHz ^{13}C -NMR spectrum of 17-allylamino-17-demethoxygeldanamycin (15).

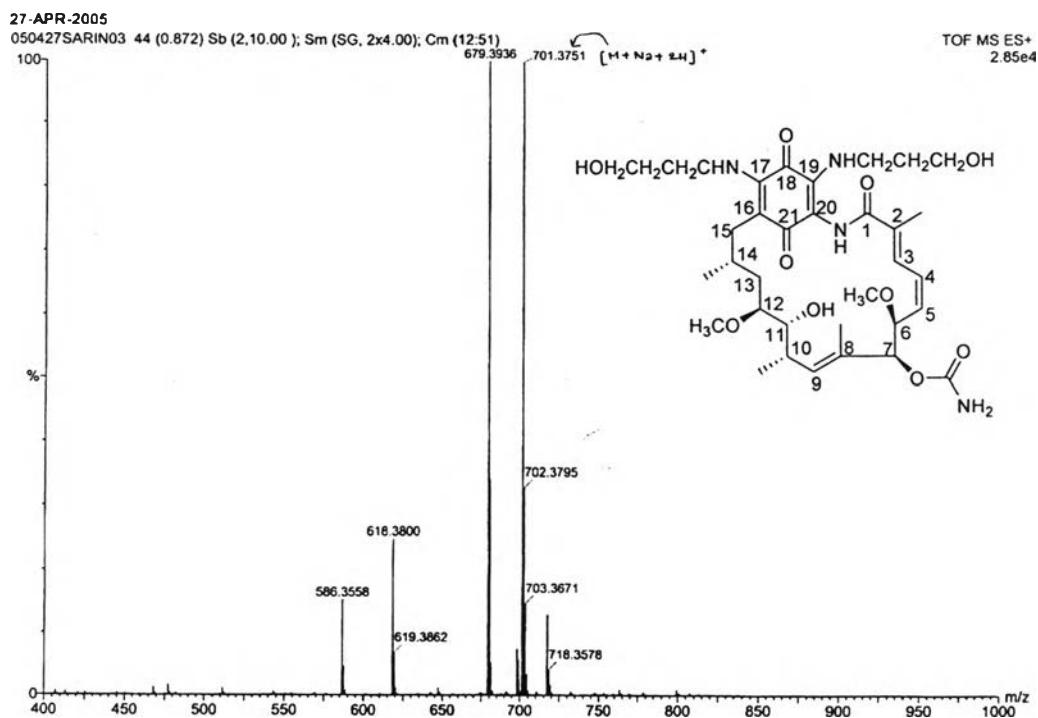


Figure N1. The ESI-Q-TOFMS spectrum of 17,19-di-hydroxypropylamino-17-demethoxygeldanamycin (16).

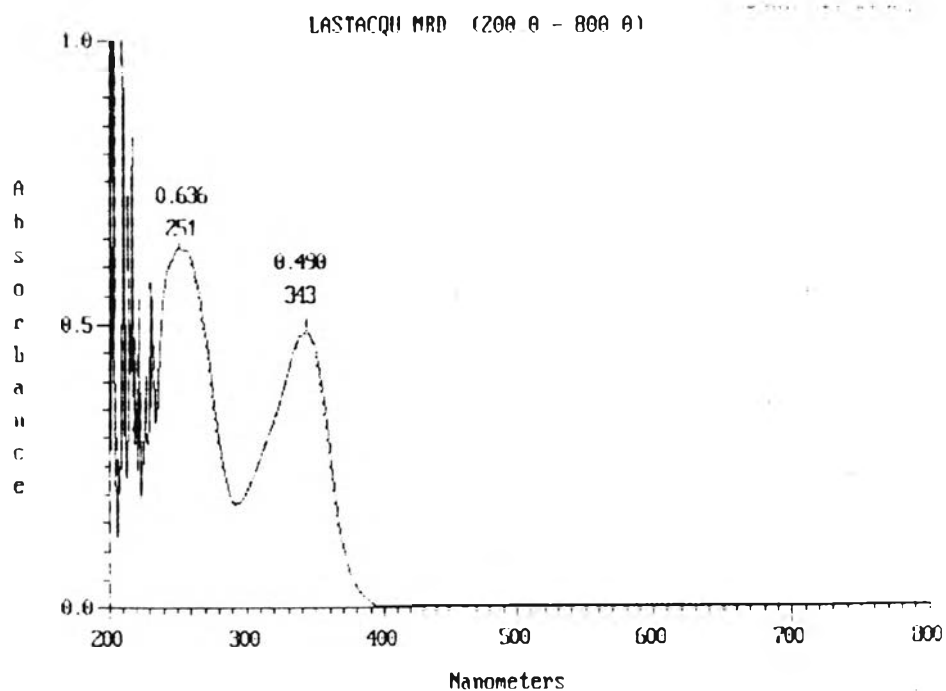


Figure N2. The UV spectrum of 17,19-di-hydroxypropylamino-17-demethoxygeldanamycin (16).

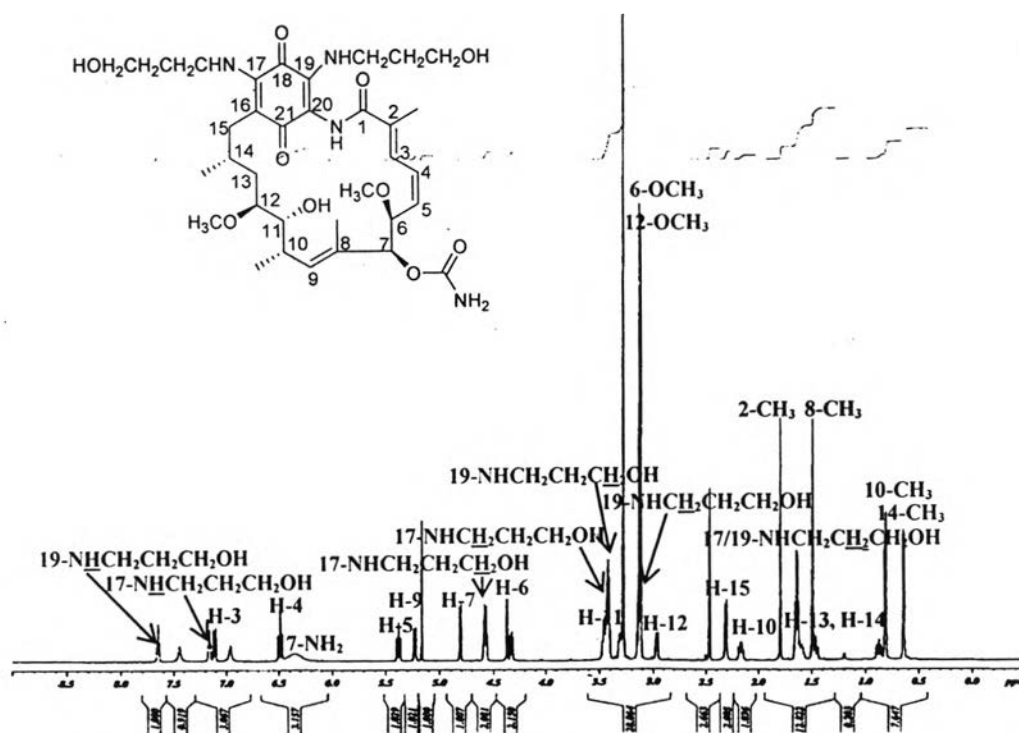


Figure N3. The 600 MHz ^1H -NMR spectrum of 17,19-dihydroxypropylamino-17-demethoxygeldanamycin (16).

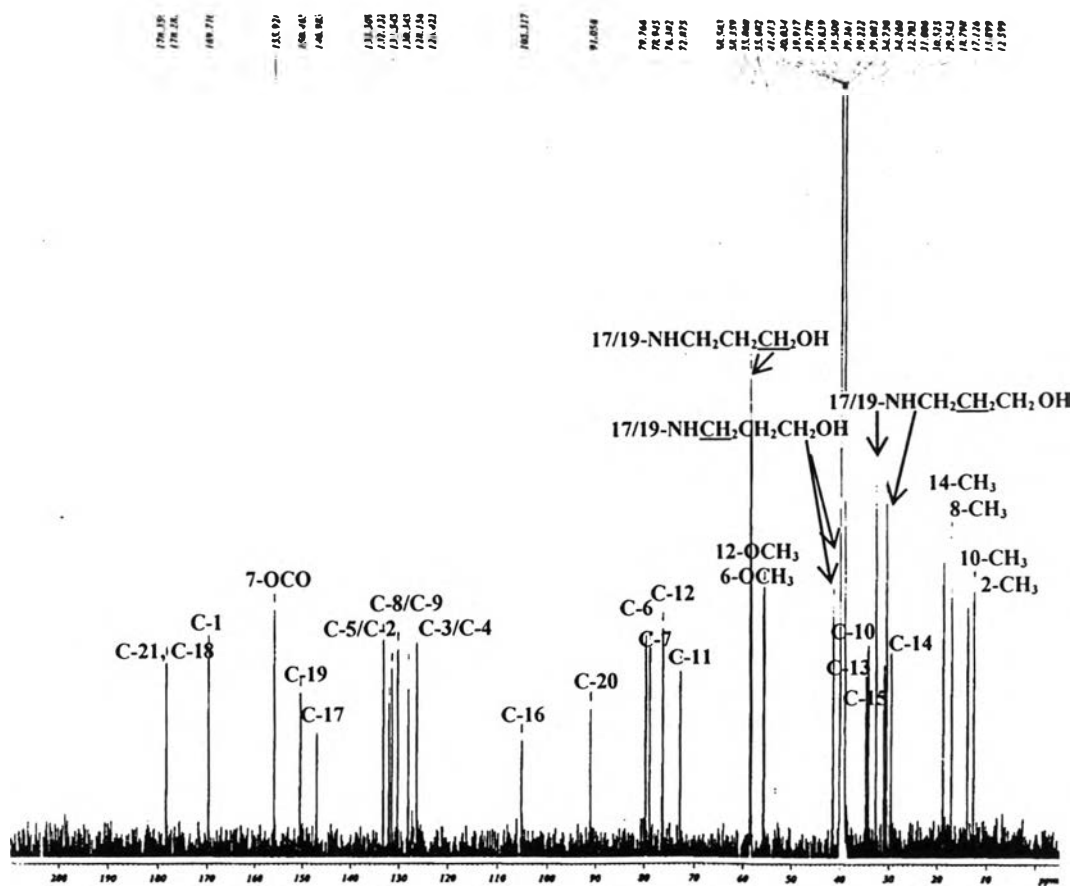


Figure N4. The 150 MHz ^{13}C -NMR spectrum of 17,19-dihydroxypropylamino-17-demethoxygeldanamycin (16).

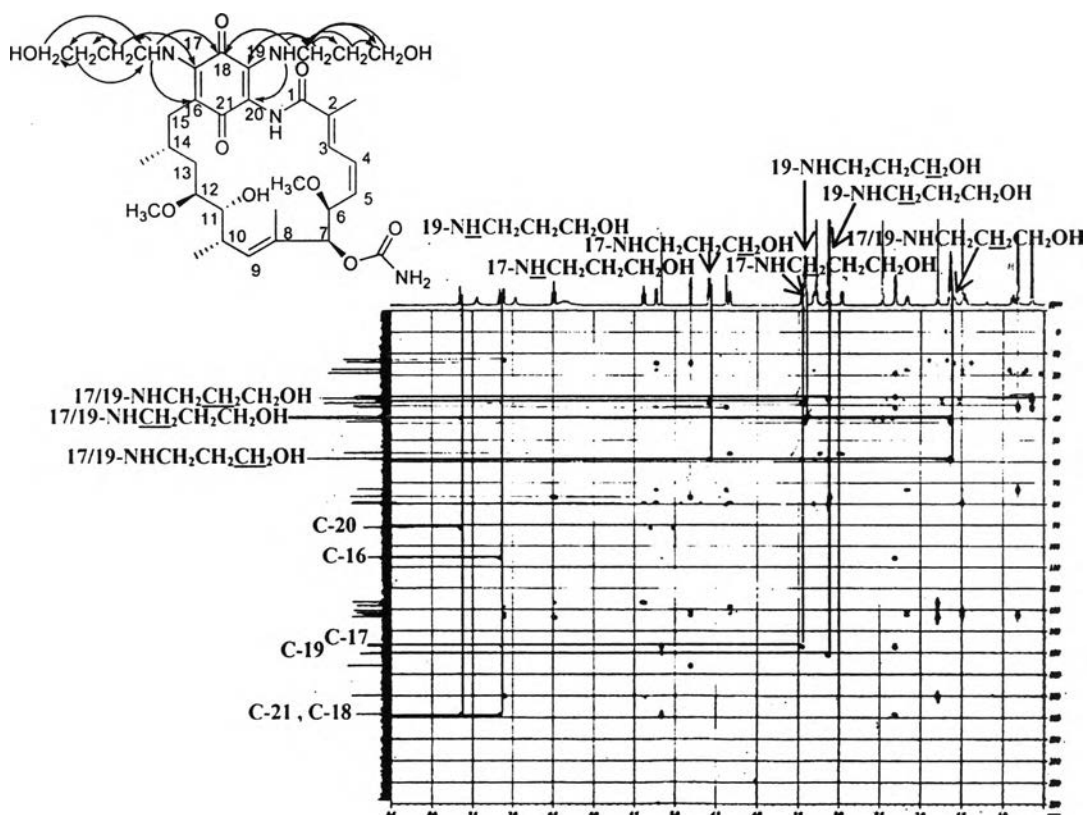
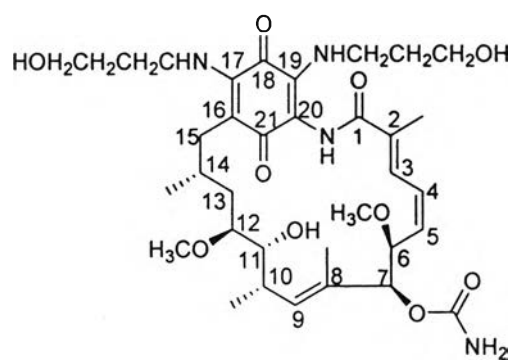


Figure N5. The HMBC spectrum of 17,19-di-hydroxypropylamino-17-demethoxygeldanamycin (16).



17,19-di-hydroxypropylamino-17-demethoxygeldanamycin (16)

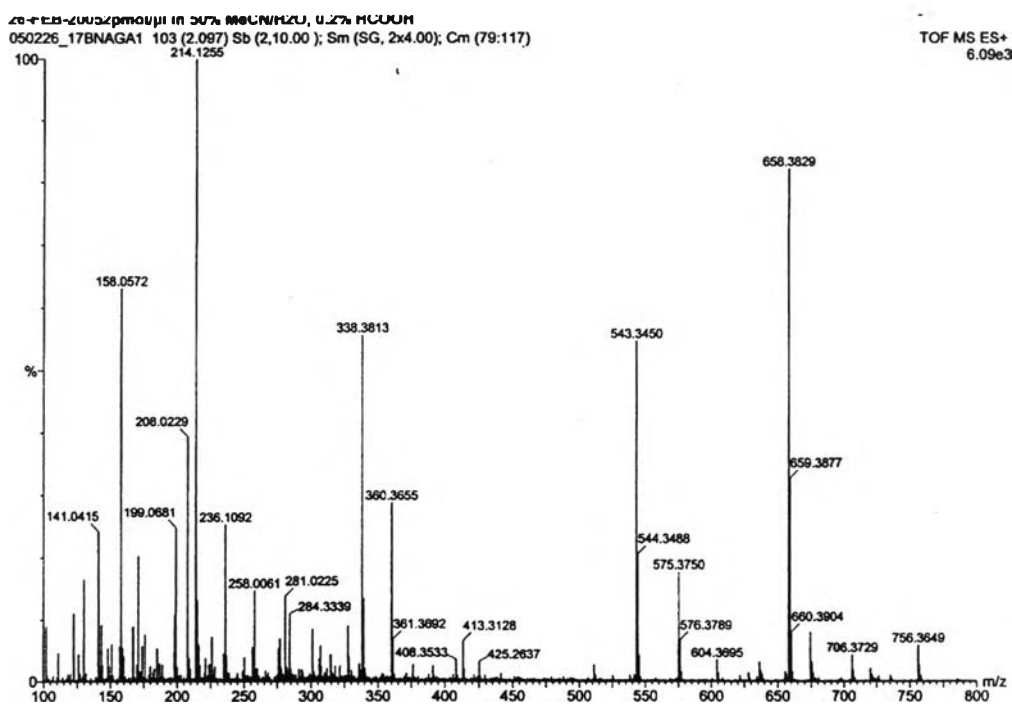


Figure O1. The ESI-Q-TOFMS spectrum of 17-benzylamino-17-demethoxygeldanamycin (17).

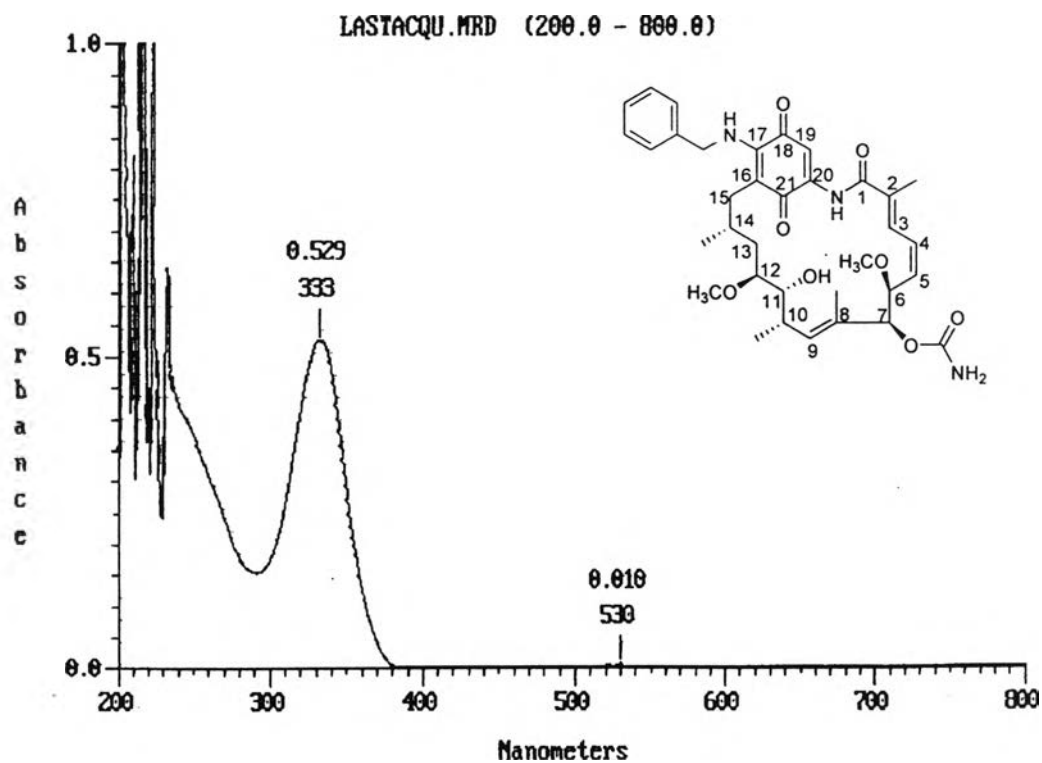


Figure O2. The UV spectrum of 17-benzylamino-17-demethoxygeldanamycin (17).

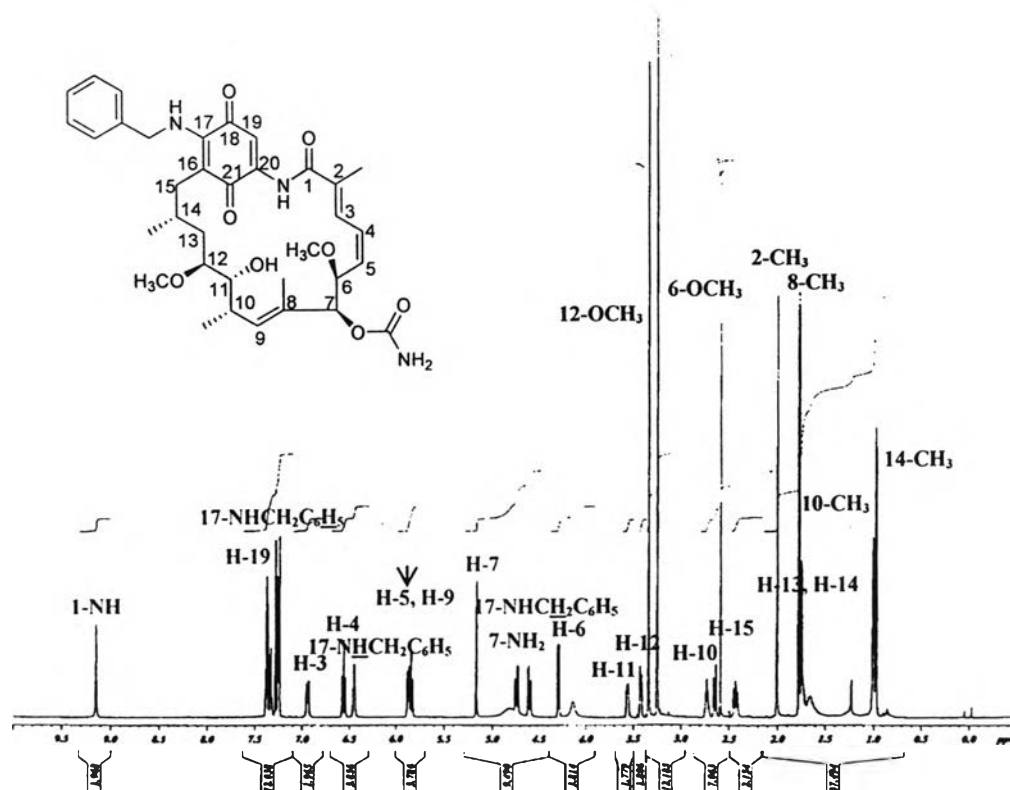


Figure O3. The 600 MHz ^1H -NMR spectrum of 17-benzylamino-17-demethoxygeldanamycin (17).

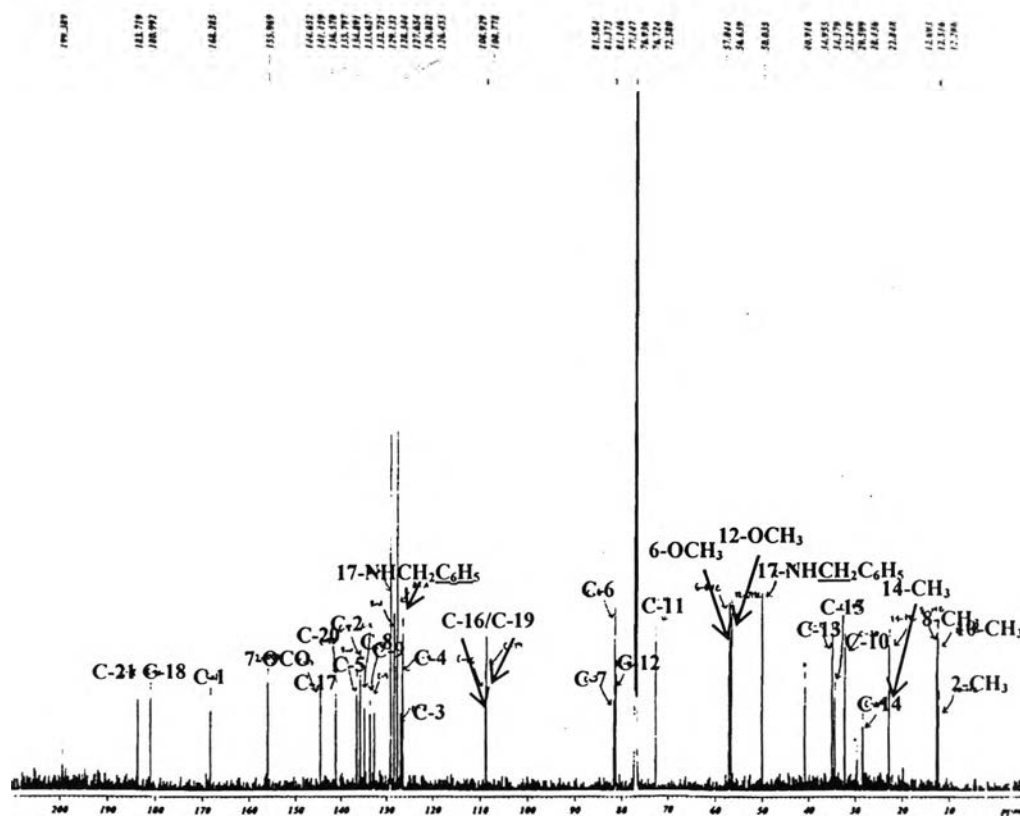


Figure O4. The 150 MHz ^{13}C -NMR spectrum of 17-benzylamino-17-demethoxygeldanamycin (17).

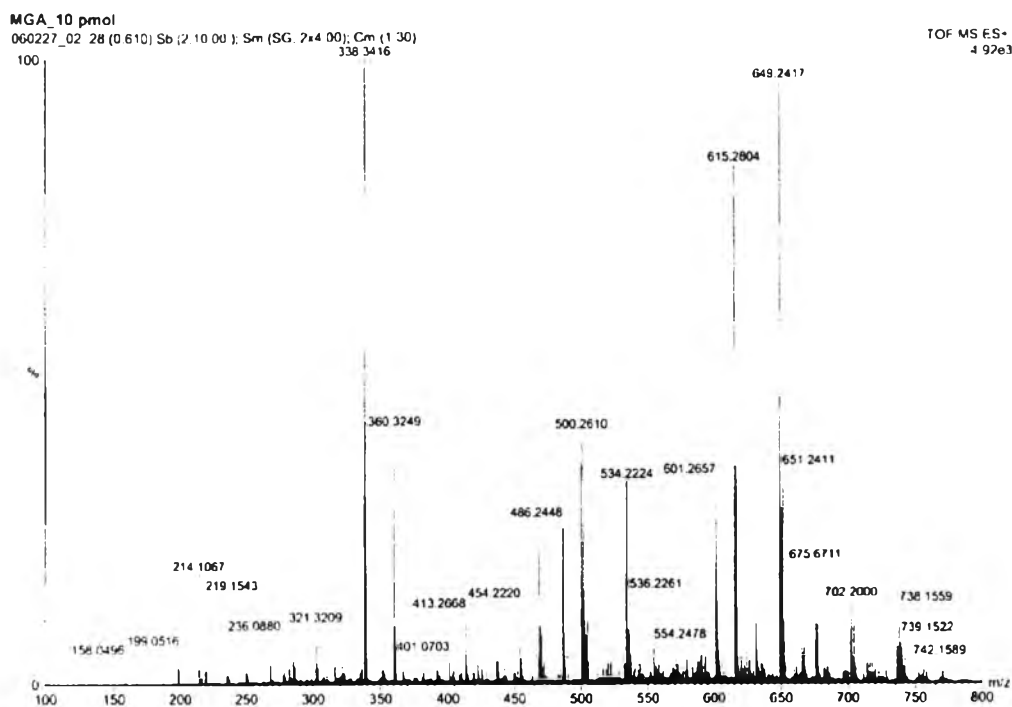


Figure P1. The ESI-Q-TOFMS spectrum of 19-*O*-methylgeldanamycin (18).

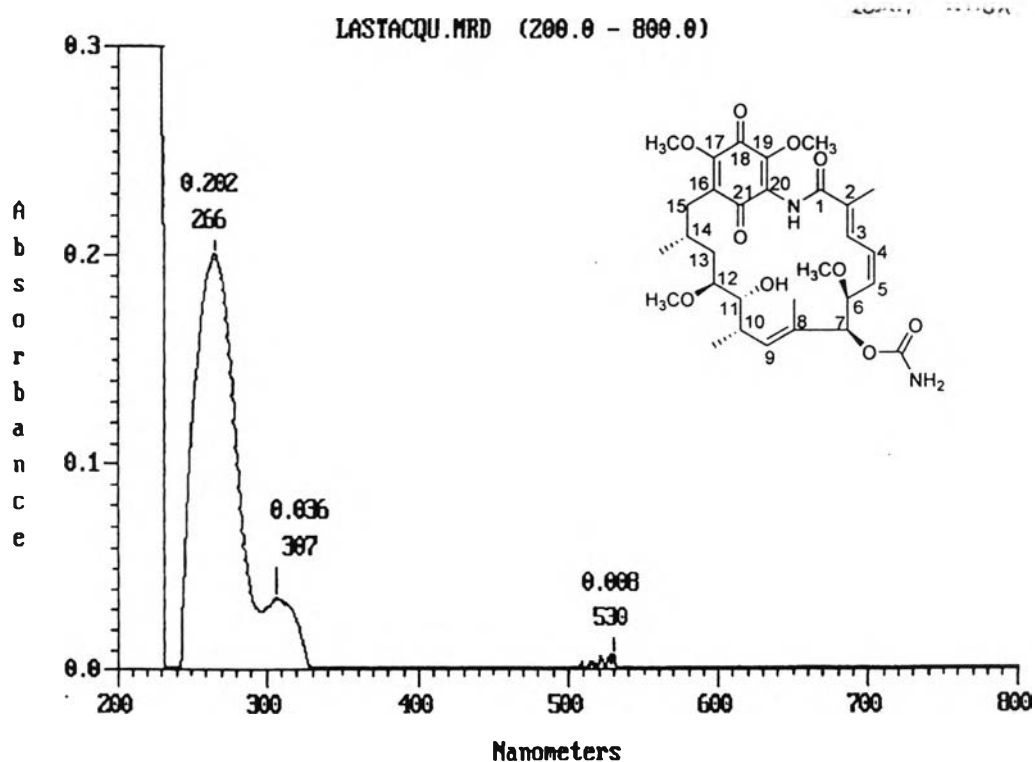


Figure P2. The UV spectrum of 19-*O*-methylgeldanamycin (18).

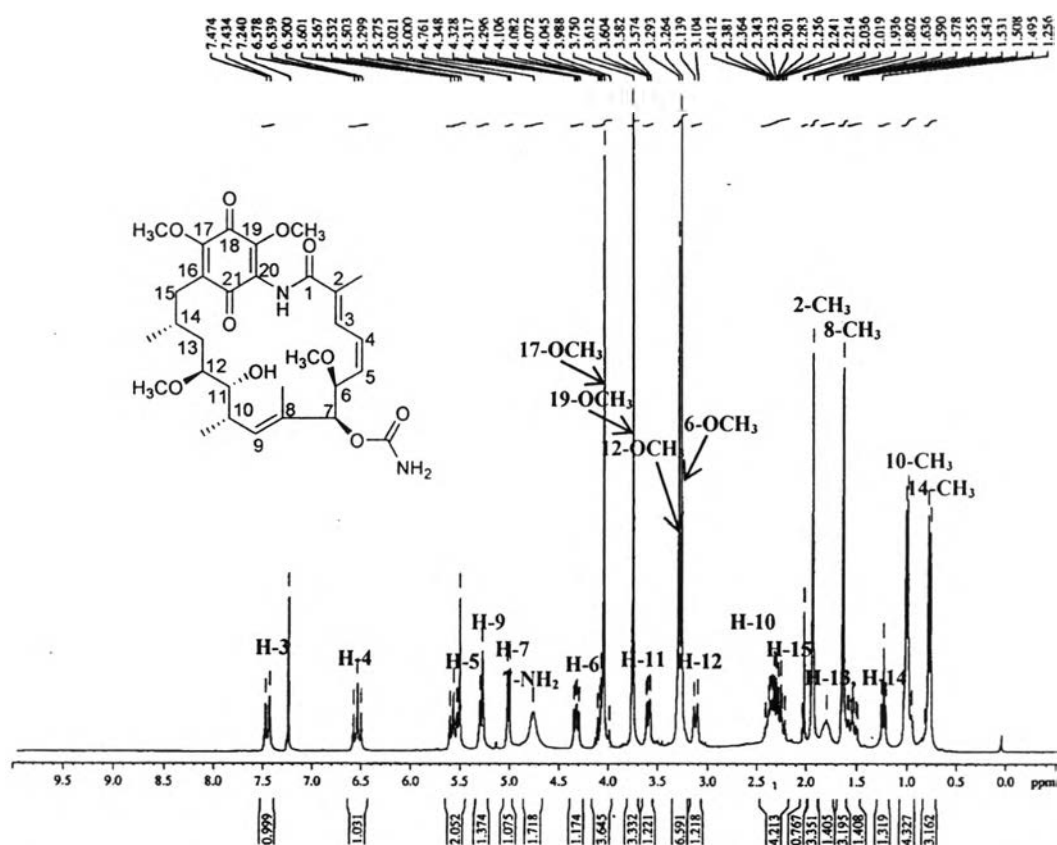


Figure P3. The 300 MHz $^1\text{H-NMR}$ spectrum of 19-*O*-methylgeldanamycin (18).

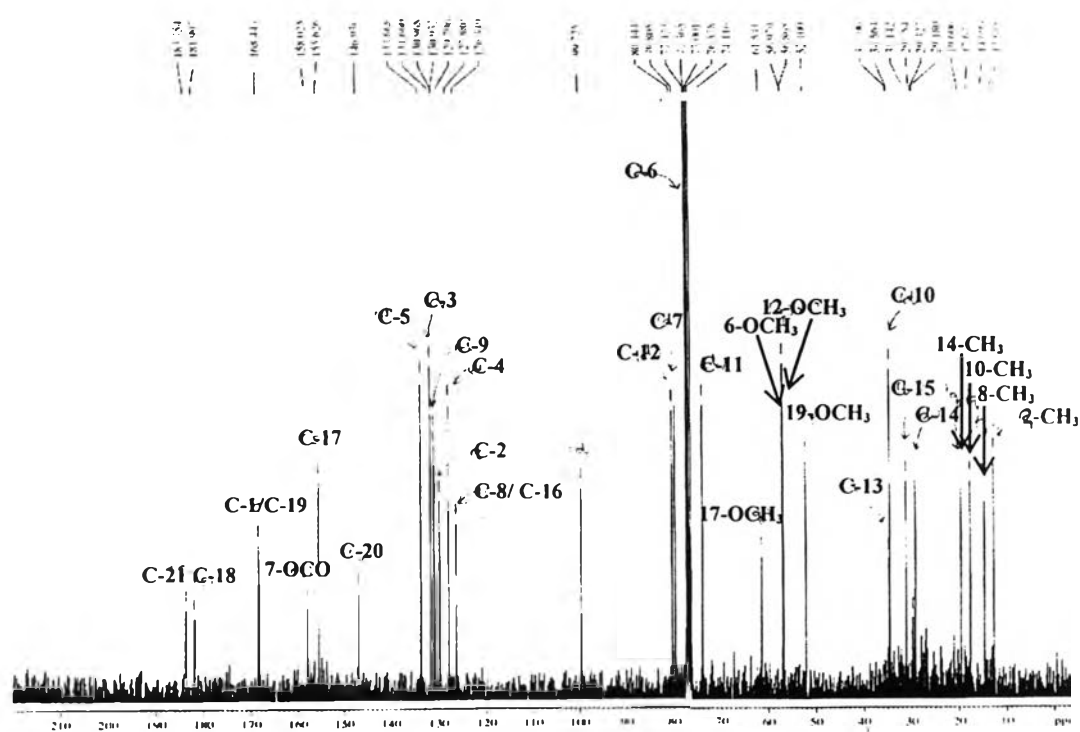


Figure P4. The 75 MHz $^{13}\text{C-NMR}$ spectrum of 19-*O*-methylgeldanamycin (18).

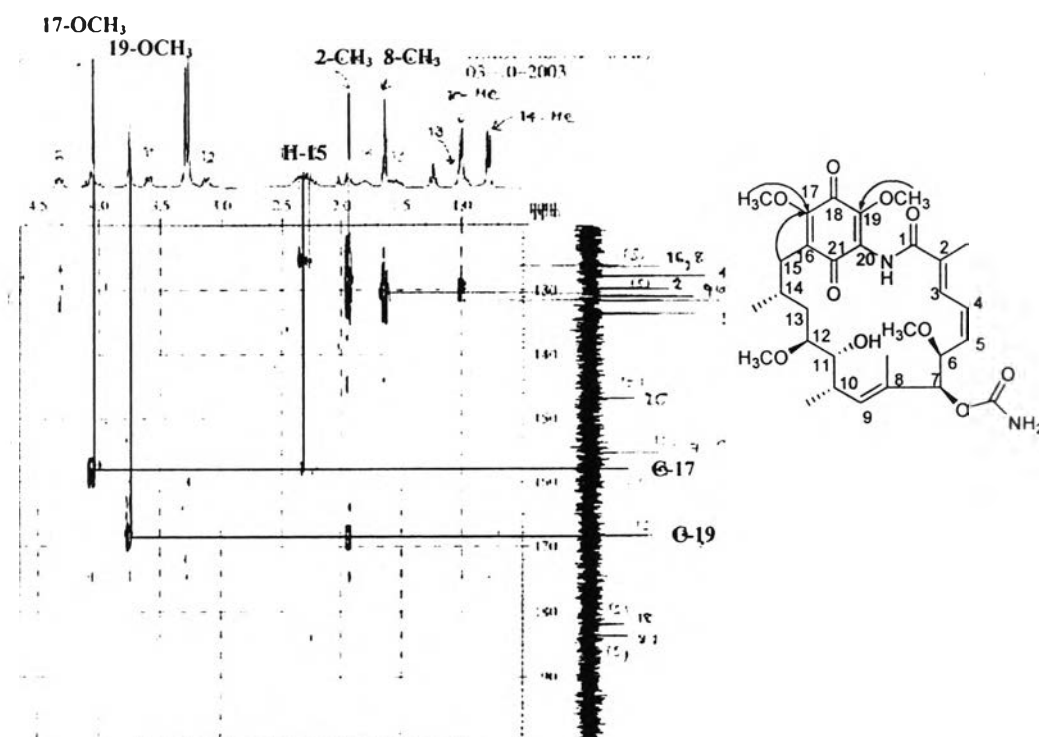
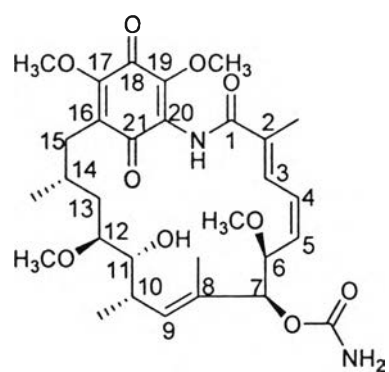


Figure P5. The HMBC spectrum of 19-*O*-methylgeldanamycin (**18**).



19-*O*-methylgeldanamycin (**18**)

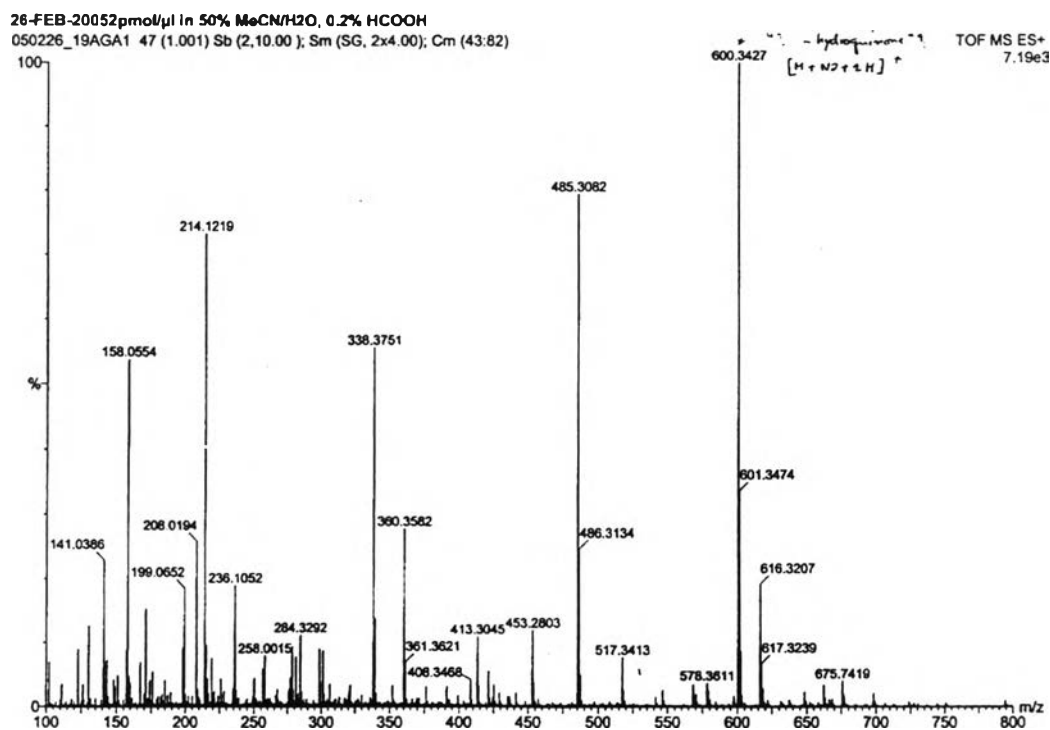


Figure Q1. The ESI-Q-TOFMS spectrum of 19-aminogeldanamycin (19).

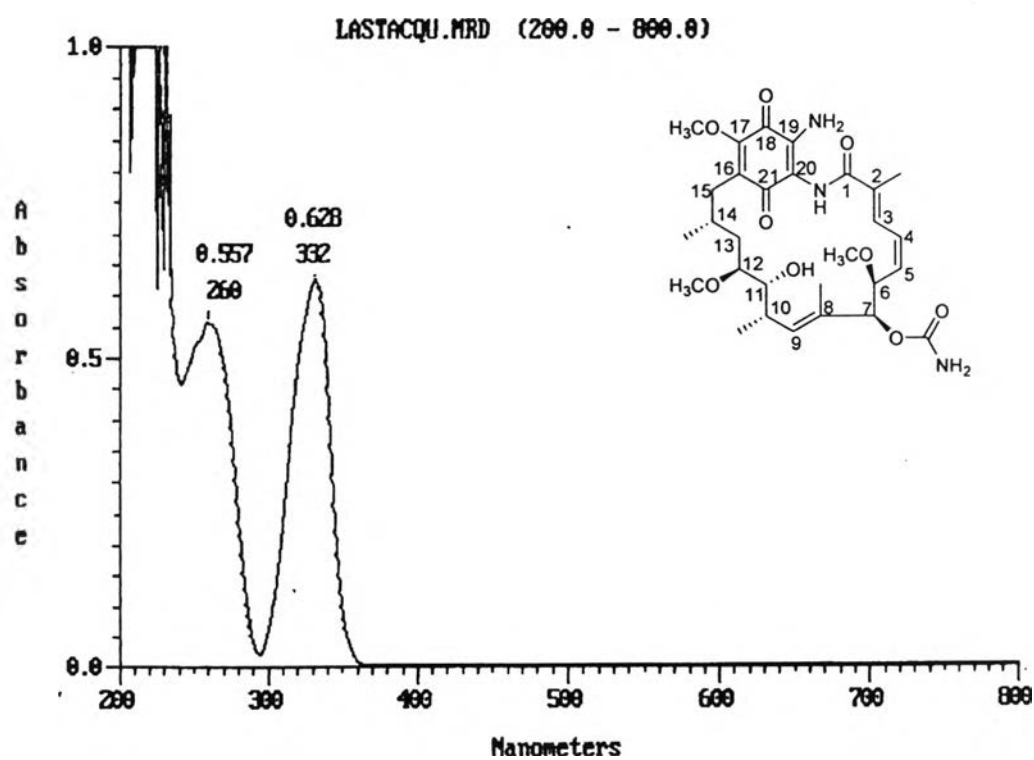


Figure Q2. The UV spectrum of 19-aminogeldanamycin (19).

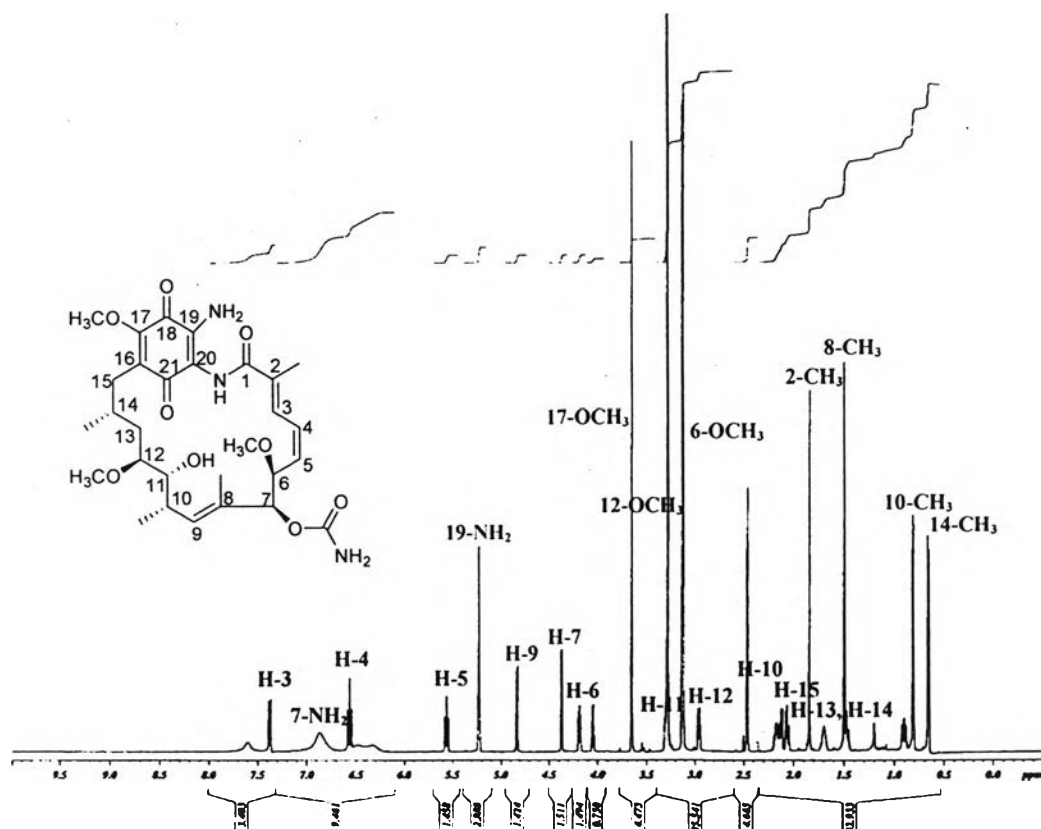


Figure Q3. The 600 MHz ^1H -NMR spectrum of 19-aminogeldanamycin (19).

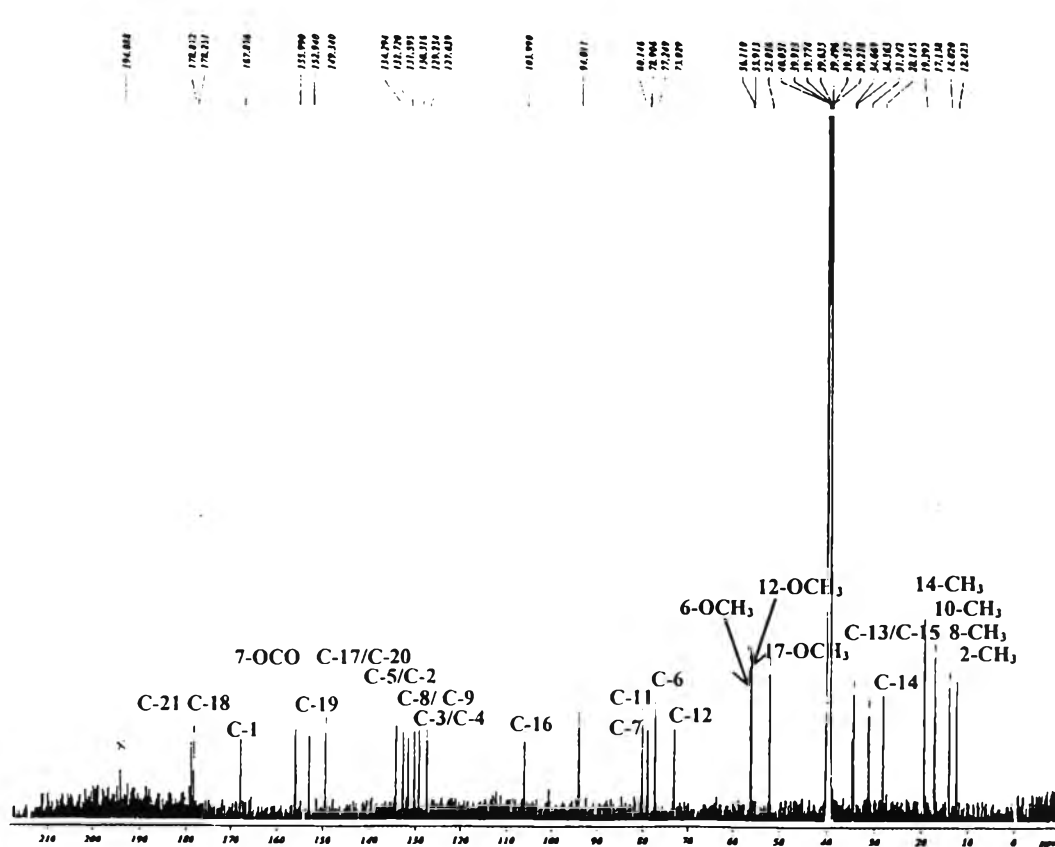


Figure Q4. The 150 MHz ^{13}C -NMR spectrum of 19-aminogeldanamycin (19).

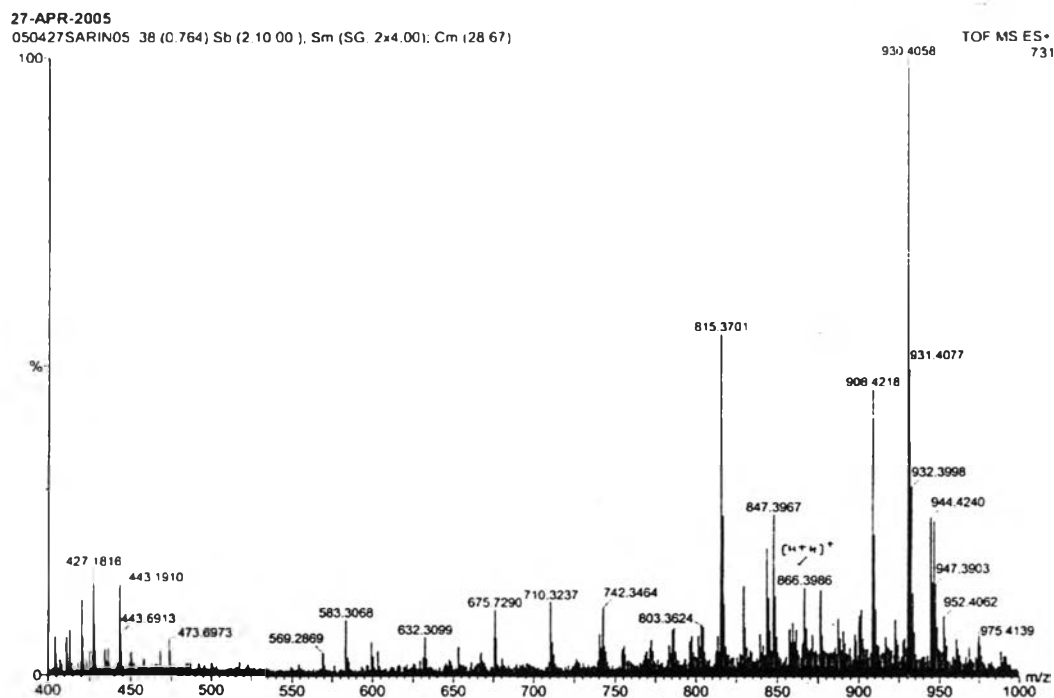


Figure R1. The ESI-Q-TOFMS spectrum of 19-glutathionylgeldanamycin (20).

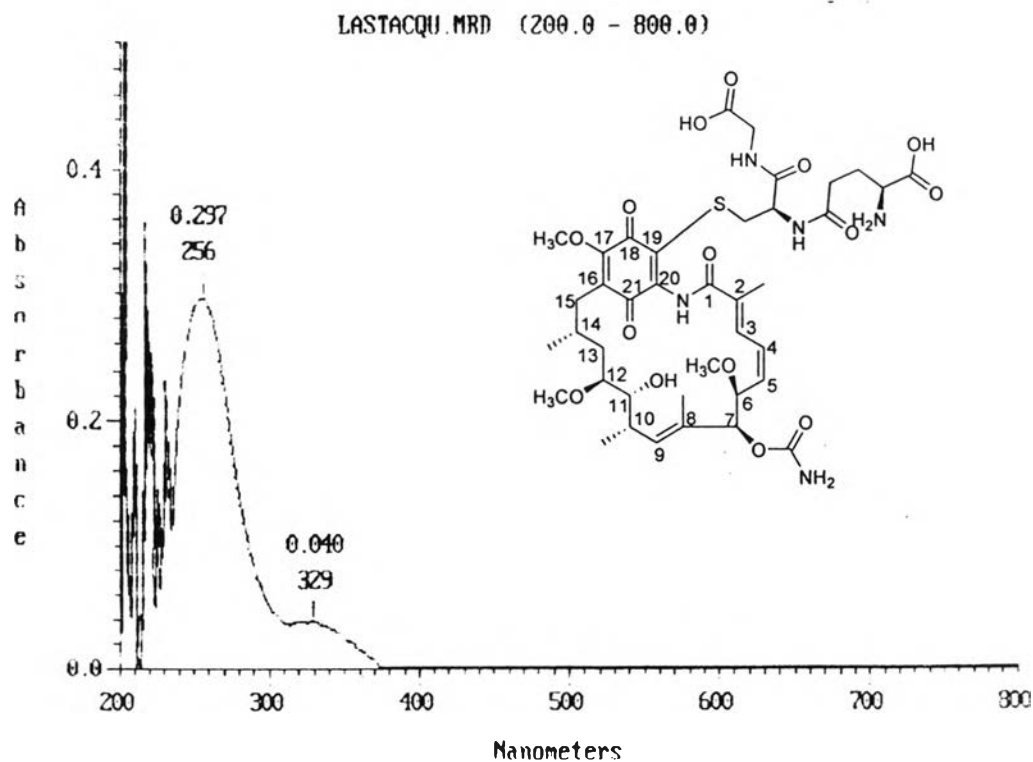


Figure R2. The UV spectrum of 19-glutathionylgeldanamycin (20).

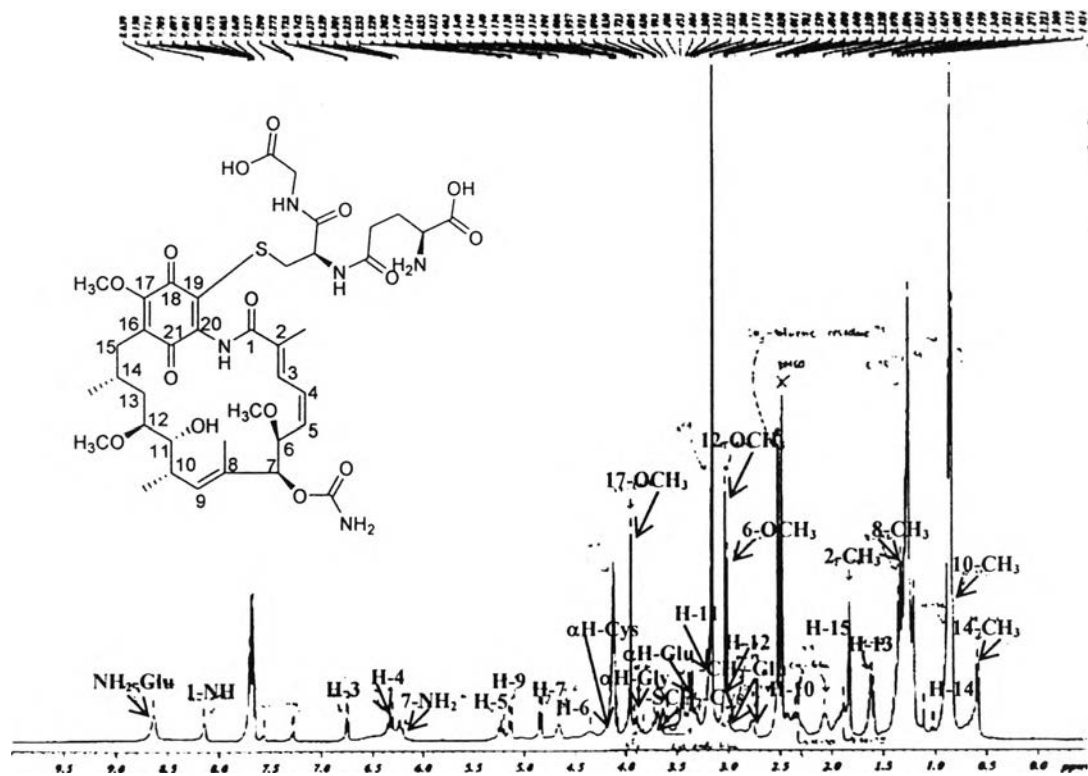
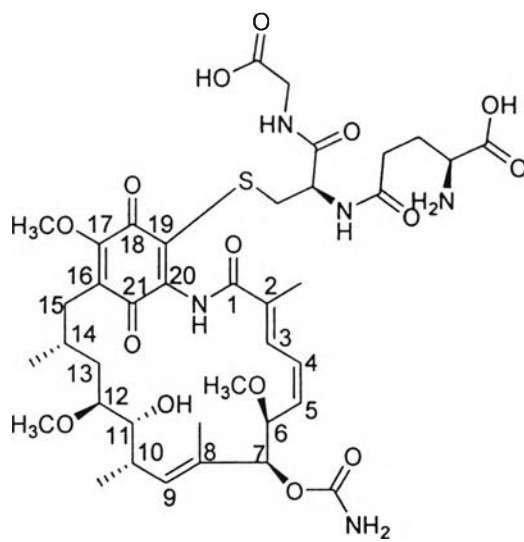


Figure R3. The 400 MHz $^1\text{H-NMR}$ spectrum of 19-glutathionylgeldanamycin (20).



19-glutathionylgeldanamycin (20)

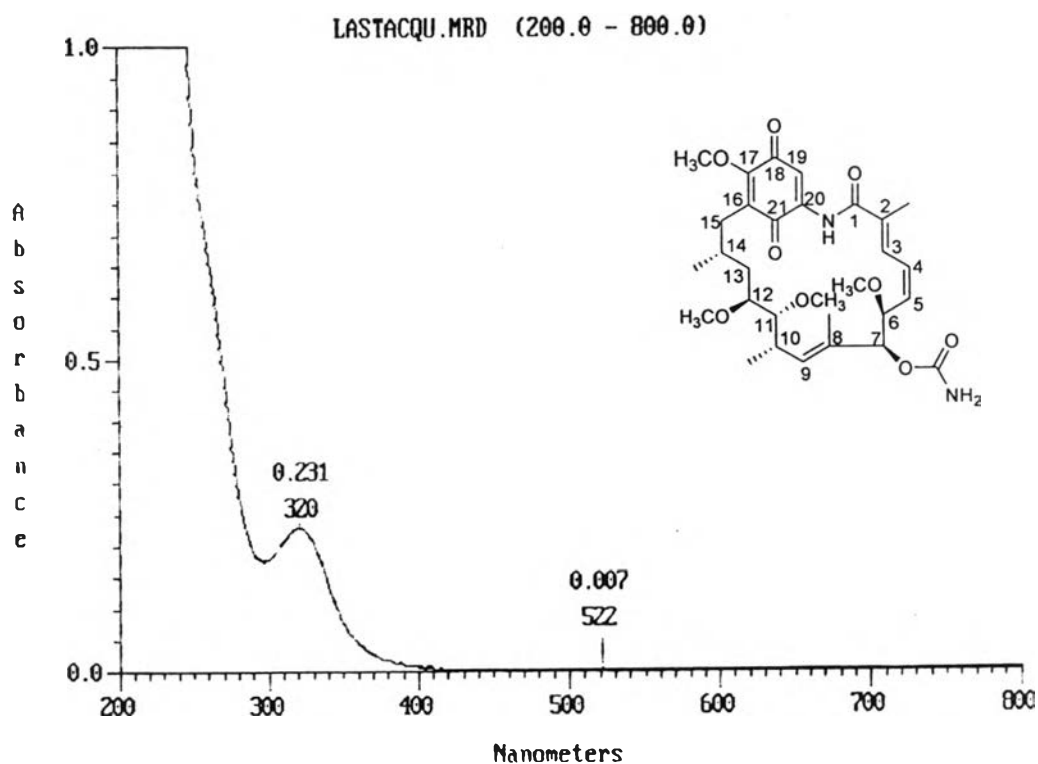


Figure S1. The UV spectrum of 11-*O*-methylgeldanamycin (21).

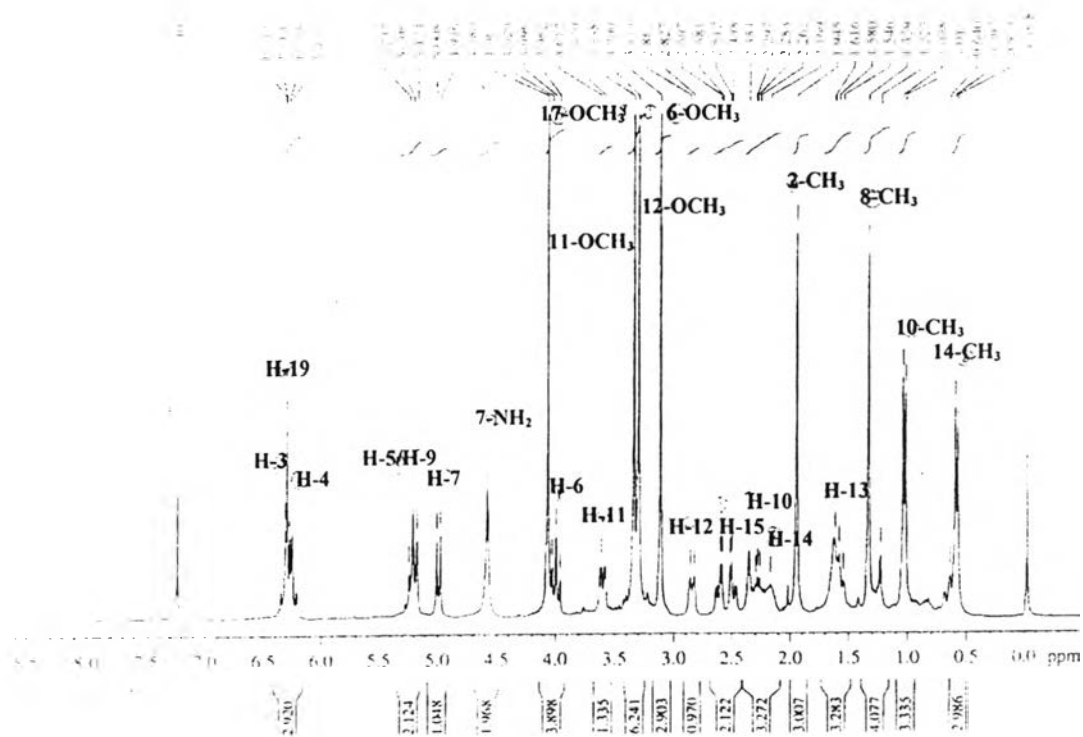


Figure S2. The 300 MHz ^1H -NMR spectrum of 11-*O*-methylgeldanamycin (21).

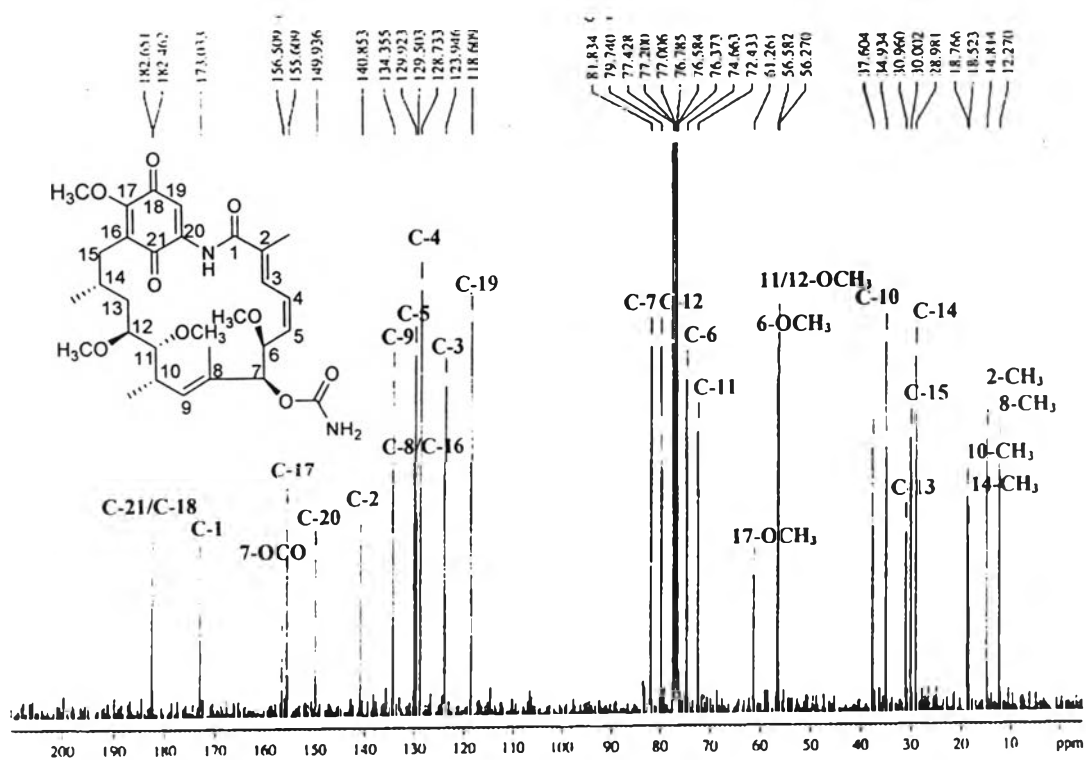
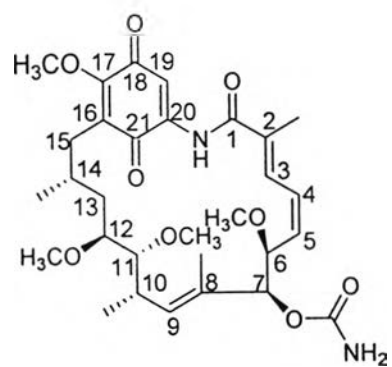


Figure S3. The 75 MHz ^{13}C -NMR spectrum of 11-*O*-methylgeldanamycin (21).



11-*O*-methylgeldanamycin (21)

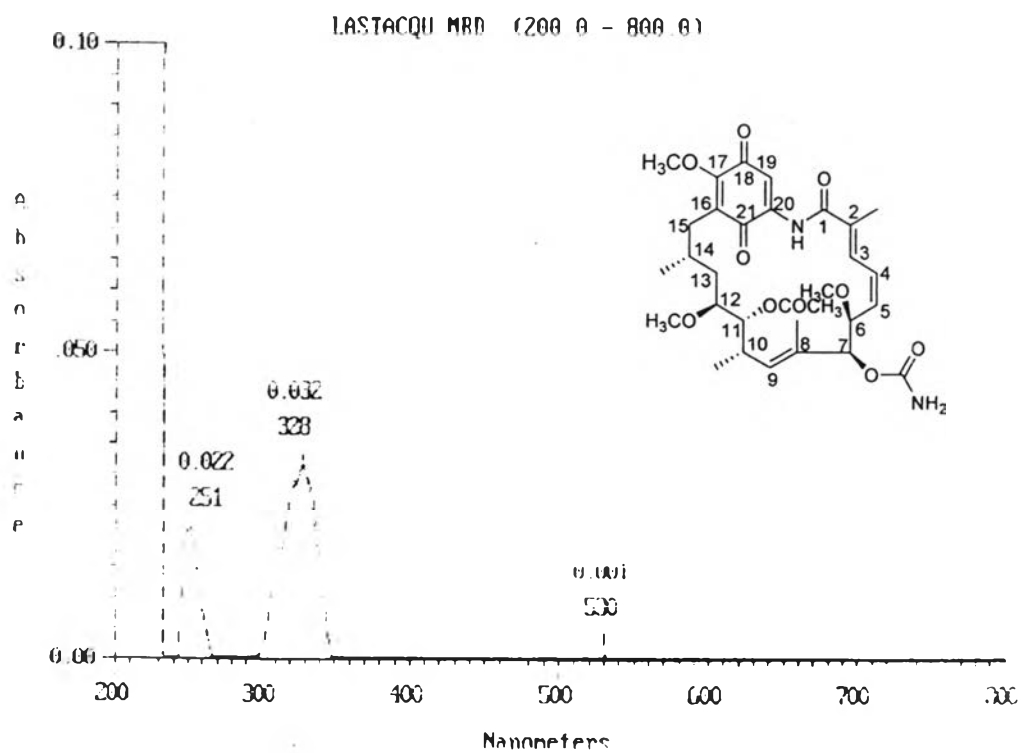


Figure T1. The UV spectrum of 11-*O*-acetylgeldanamycin (22).

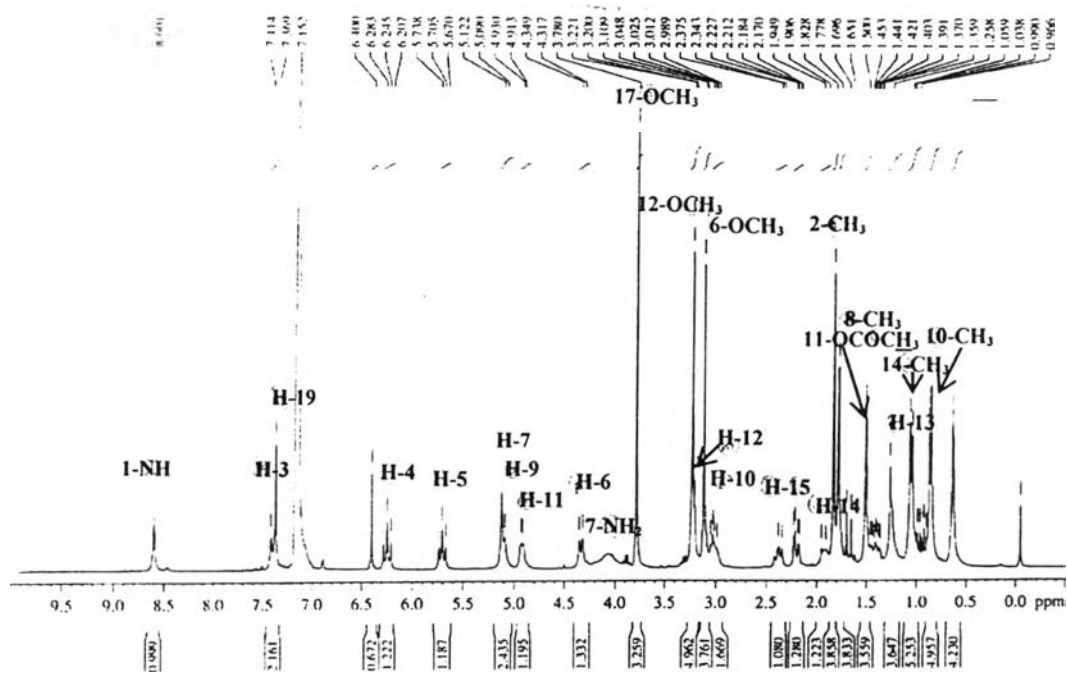


Figure T2. The 300 MHz ^1H -NMR spectrum of 11-*O*-acetylgeldanamycin (22).

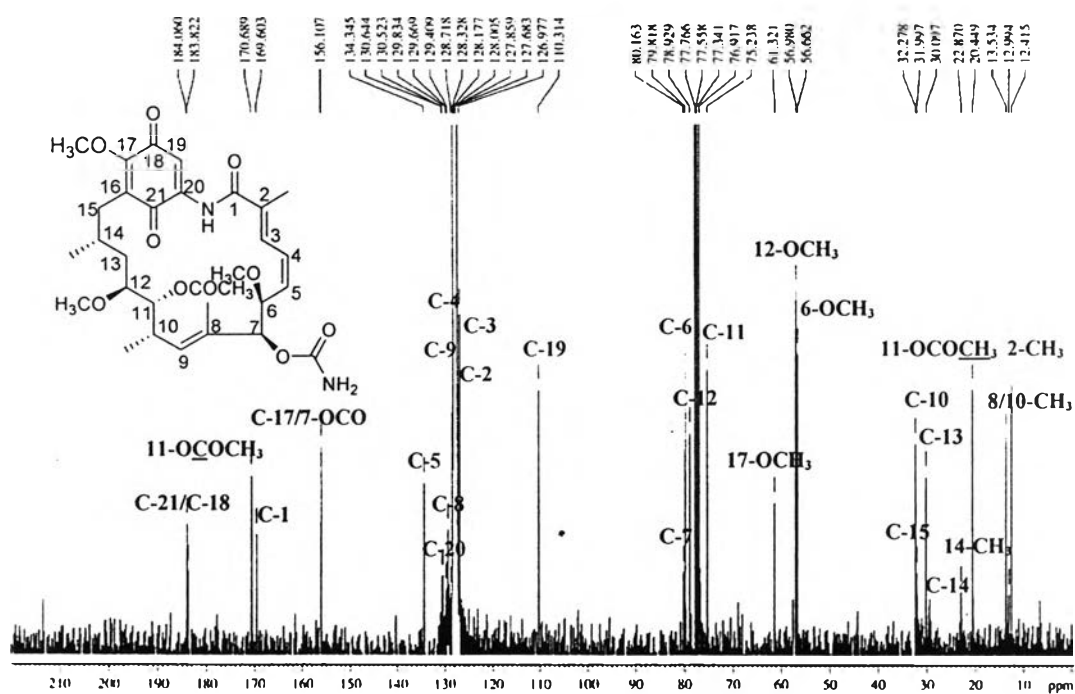
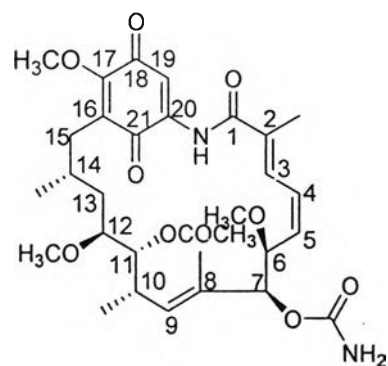


Figure T3. The 75 MHz ^{13}C -NMR spectrum of 11-*O*-acetylgeldanamycin (22).



11-*O*-acetylgeldanamycin (22)

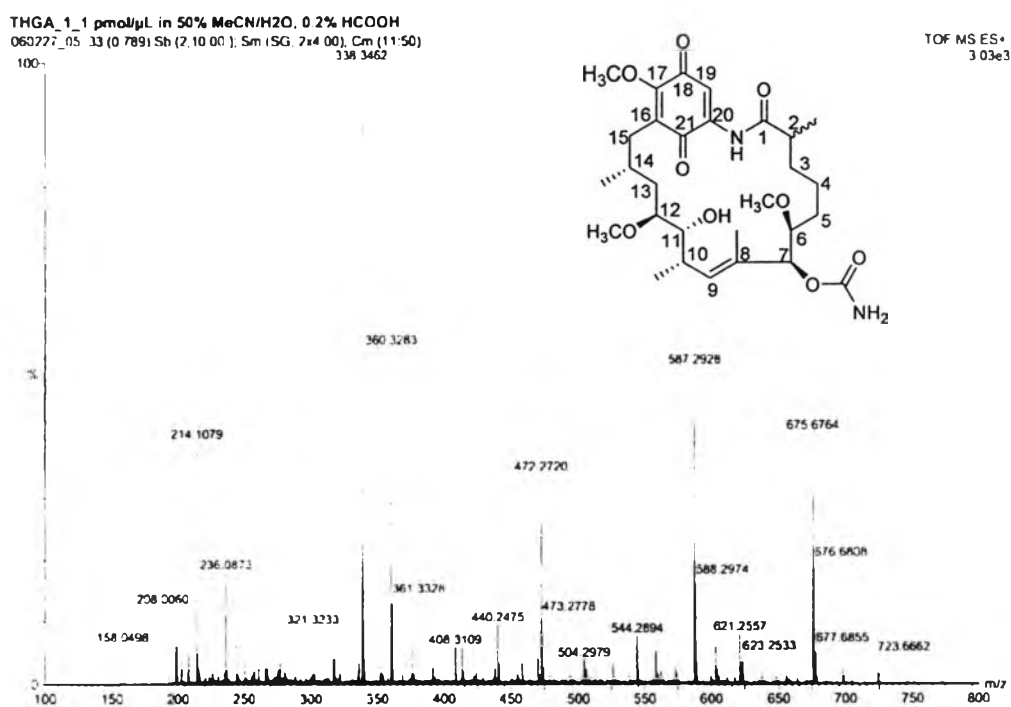


Figure U1. The ESI-Q-TOFMS spectrum of 2,3,4,5-tetrahydrogeldanamycin (23).

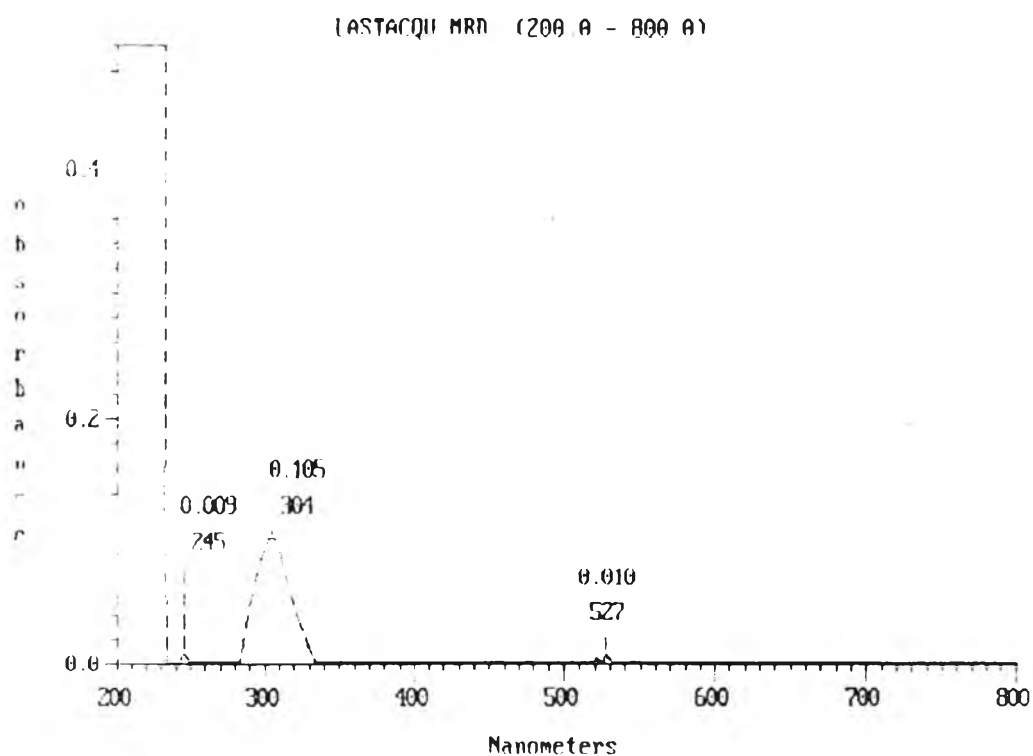


Figure U2. The UV spectrum of 2,3,4,5-tetrahydrogeldanamycin (22).

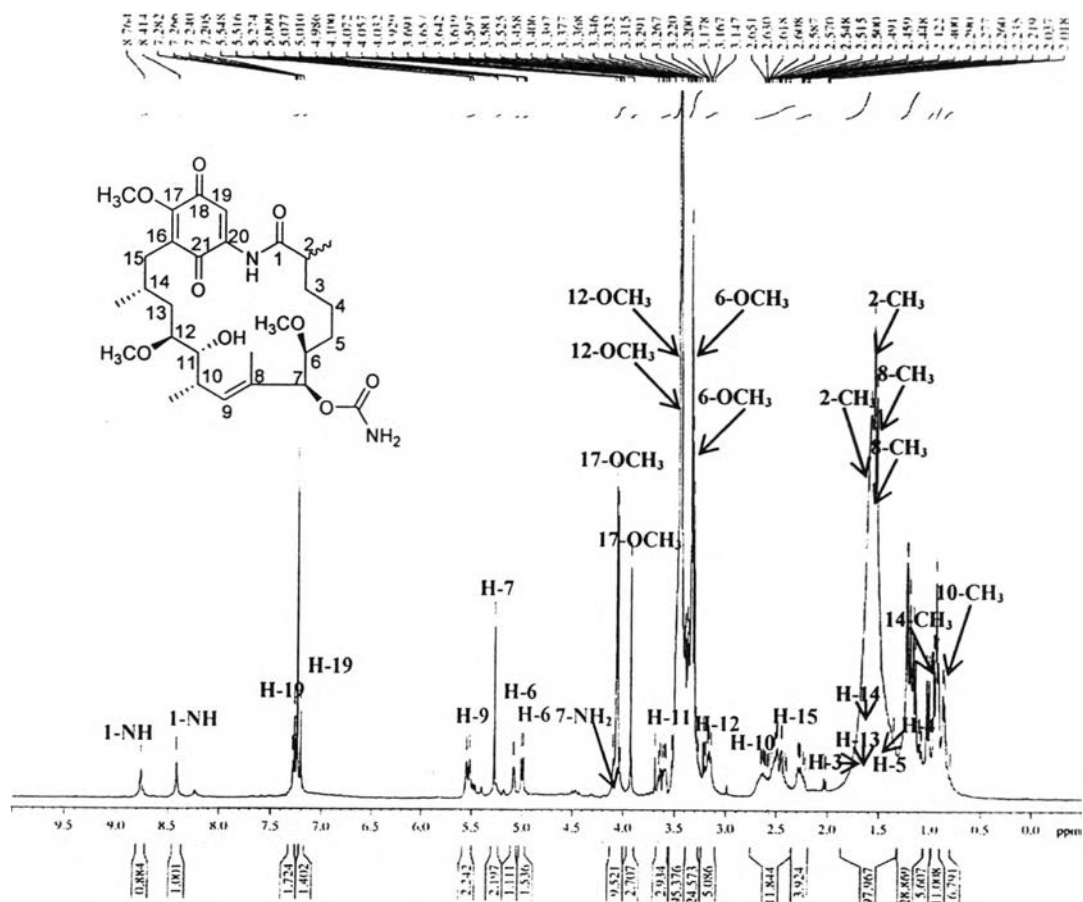
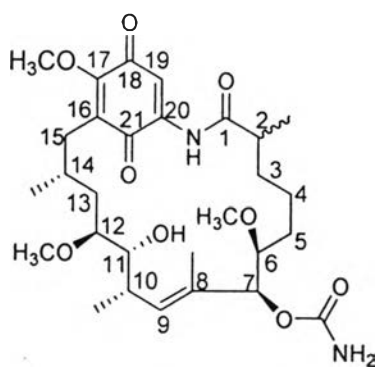


Figure U3. The 300 MHz $^1\text{H-NMR}$ spectrum of 2,3,4,5-tetrahydrogeldanamycin (22).



2,3,4,5-tetrahydrogeldanamycin (22)

VITAE

Miss Sarin Tadtong was born on May 12, 1978 in Bangkok, Thailand. She received her Bachelor Degree of Science in Pharmacy from the Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand in 1998. She got the University Development Commission (UDC) scholarship in 1999 for study her Master Degree of Science in Pharmacy at the Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. She has been granted a 2002 Royal Golden Jubilee Ph.D. Scholarship from the Thailand Research Fund (TRF) to continue her study for the field of Pharmaceutical Chemistry and Natural Products at the Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. She has been working as a lecturer at the Faculty of Pharmacy, Srinakharinwirot University, Ongkharak Campus since 2000.

Oral Presentation

Sarin Tadtong, Duangdeun Meksuriyen, Somboon Tanasupawat, Minoru Isobe, and Khanit Suwanborirux. "Structures of Geldanamycins and Their Bioactivity on P19 Neuron-Like Cells" RGJ-Ph.D. Congress VII, April 20-22, 2006, Pattaya, Chonburi, Thailand.

Poster Presentation

Sarin Tadtong, Khanit Suwanborirux, Somboon Tanasupawat, and Suwigarn Pedpradoub. "A New Geldanamycin Derivative from a Thai Mangrove *Streptomyces* sp." p87. 10th International Symposium on Marine Natural Products. June 24-29, 2001, Nago, Okinawa, Japan.

Sarin Tadtong, Duangdeun Meksuriyen, Somboon Tanasupawat, Minoru Isobe, and Khanit Suwanborirux. "Structures of Geldanamycins and Their Bioactivity on P19 Neuron-Like Cells" ICOB-5 & ISCNP-25 IUPAC International Conference on Biodiversity and Natural Products. July 23-28, 2006, Kyoto, Japan.

