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APPENDIX

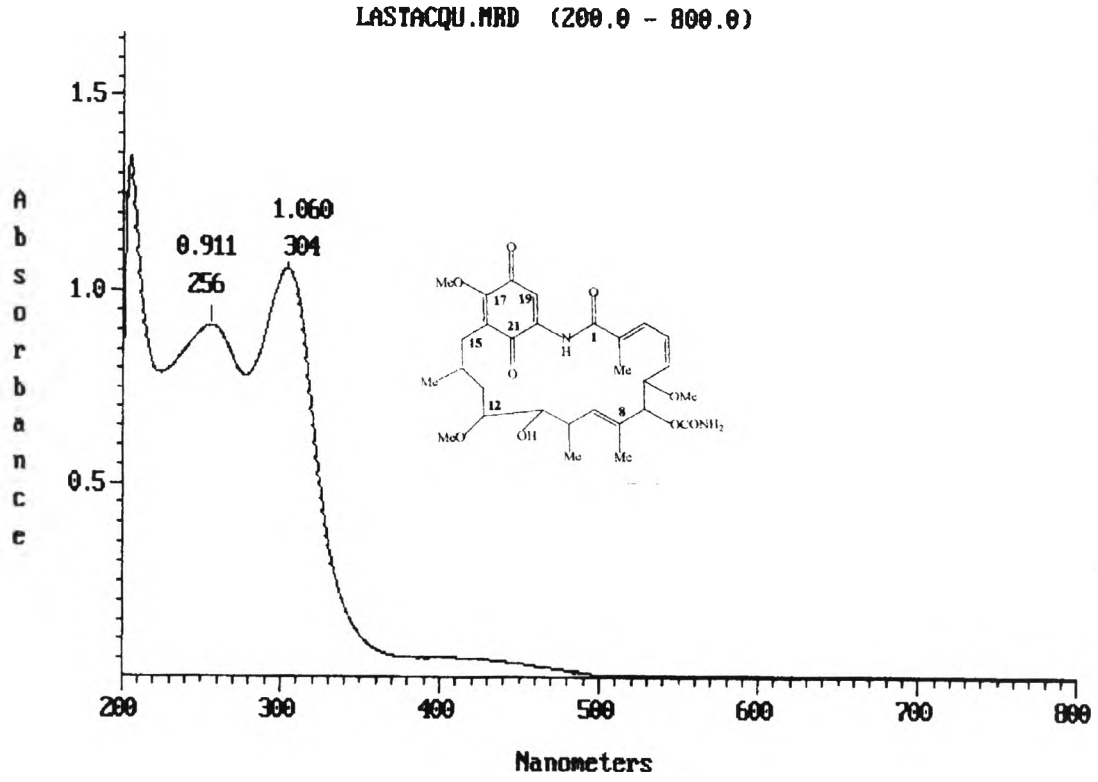


Figure 11 The UV spectrum of geldanamycin (KTR75001k).

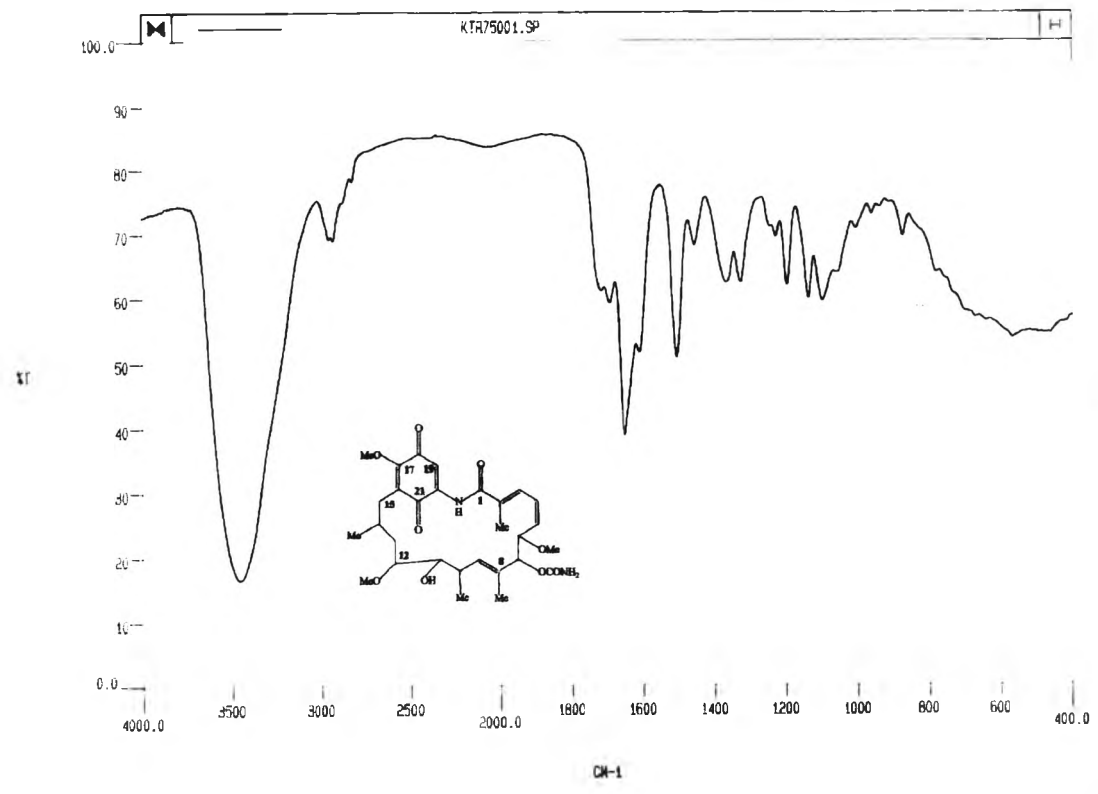


Figure 12 The IR spectrum of geldanamycin (KTR75001k).

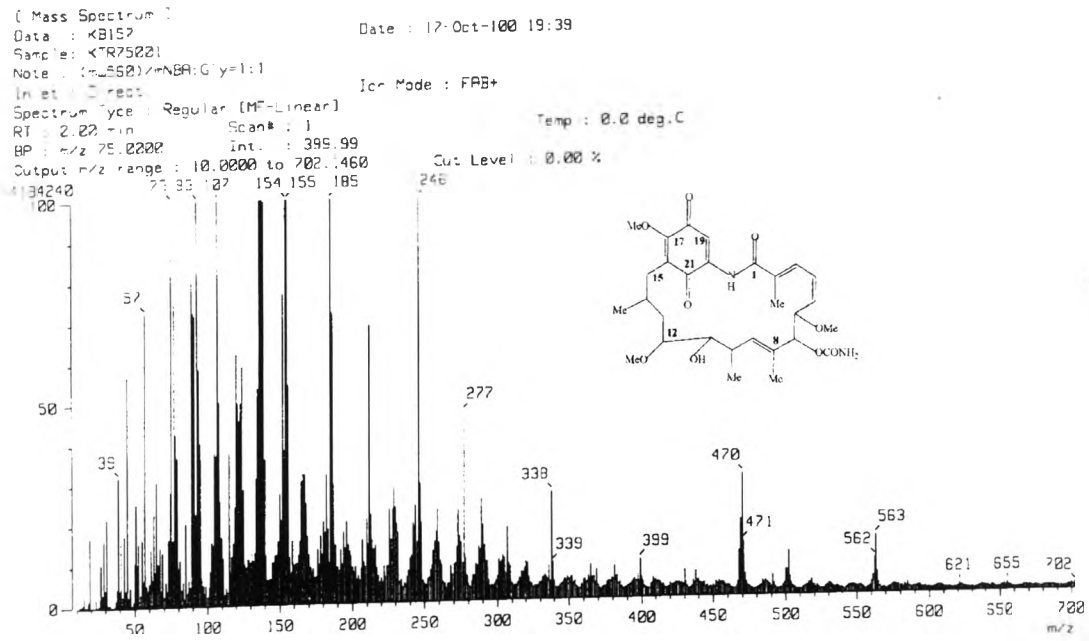


Figure 13 The FAB mass spectrum of geldanamycin (KTR75001k).

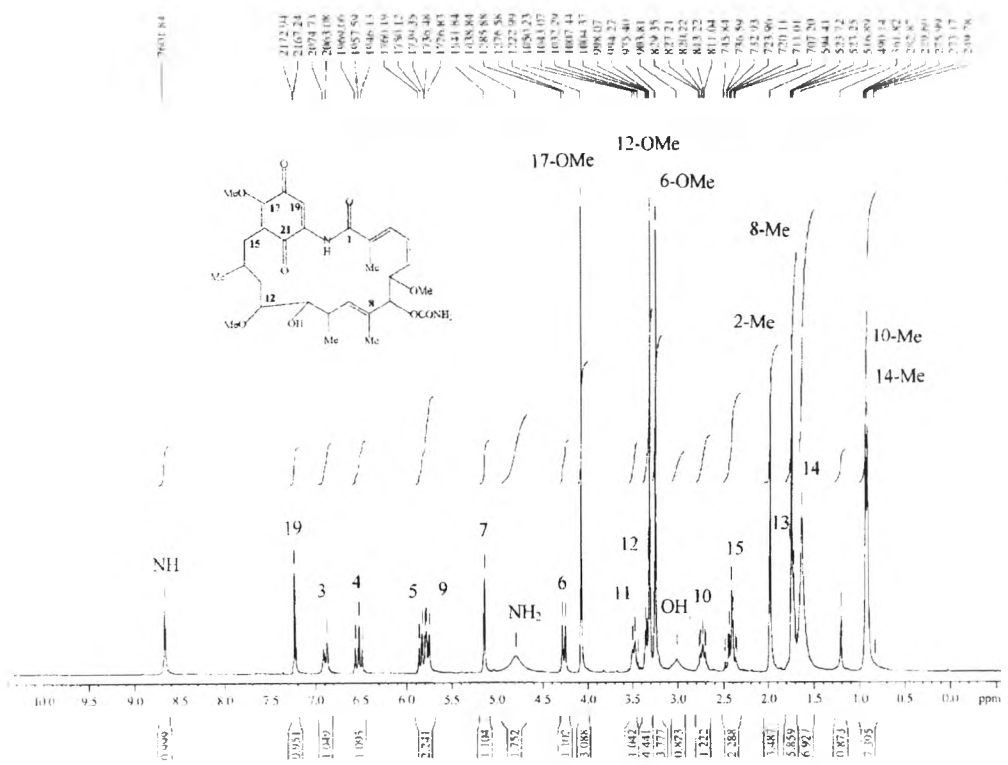


Figure 14 The 300 MHz ^{1}H-NMR spectrum of geldanamycin (KTR75001k) in $CDCl_3$.

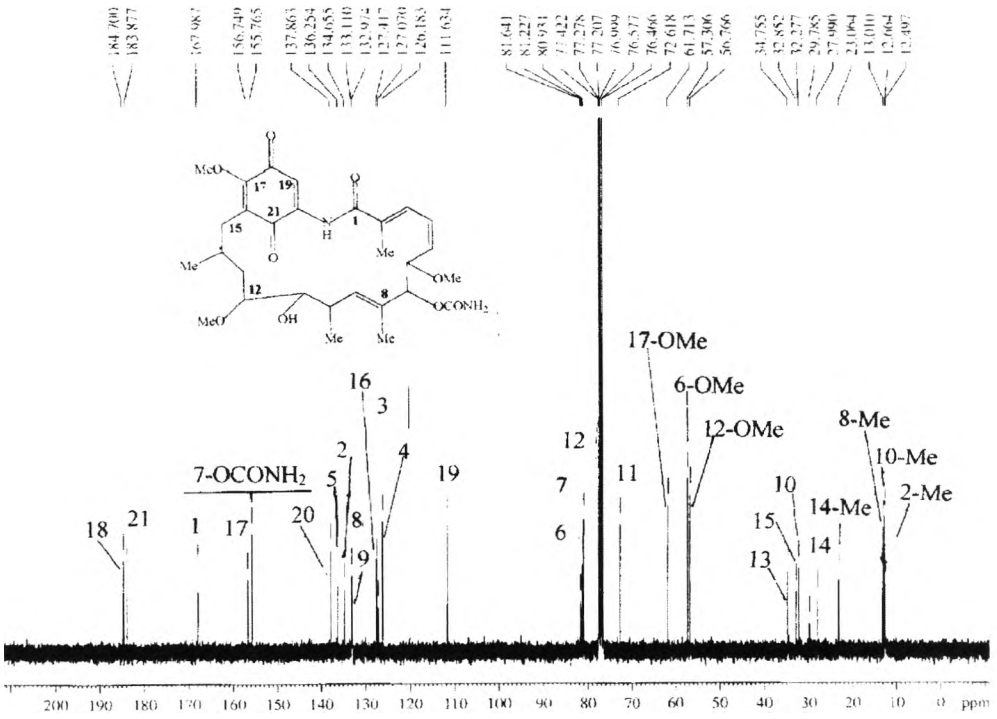


Figure 15 The 75 MHz ^{13}C-NMR spectrum of geldanamycin (KTR75001k) in $CDCl_3$.

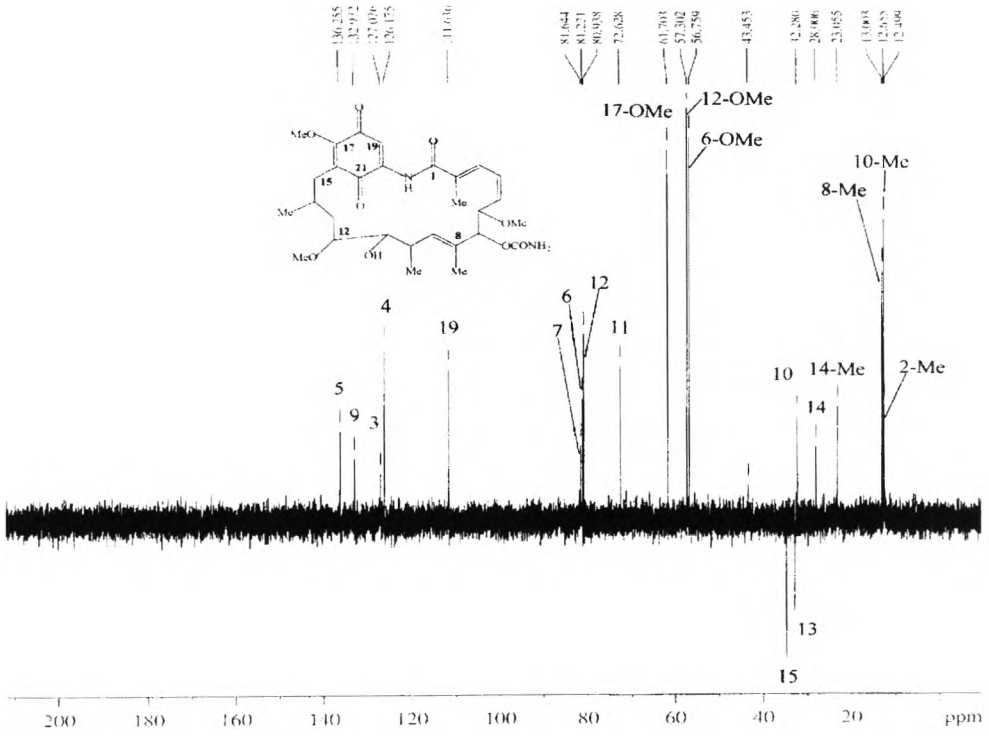


Figure 16 The 75 MHz DEPT 135 spectrum of geldanamycin (KTR75001k) in $CDCl_3$.

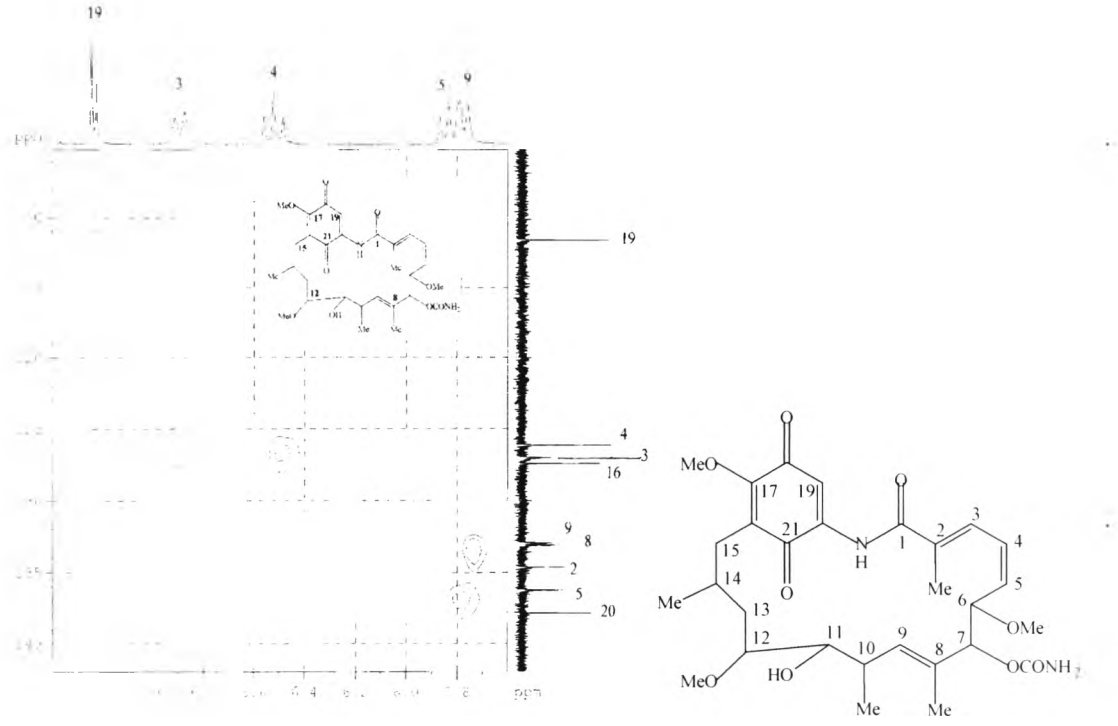


Figure 17 The 300 MHz HMQC spectrum of geldanamycin (KTR75001k) in $CDCl_3$ (expanded from δ_H 7.40-5.60 ppm).

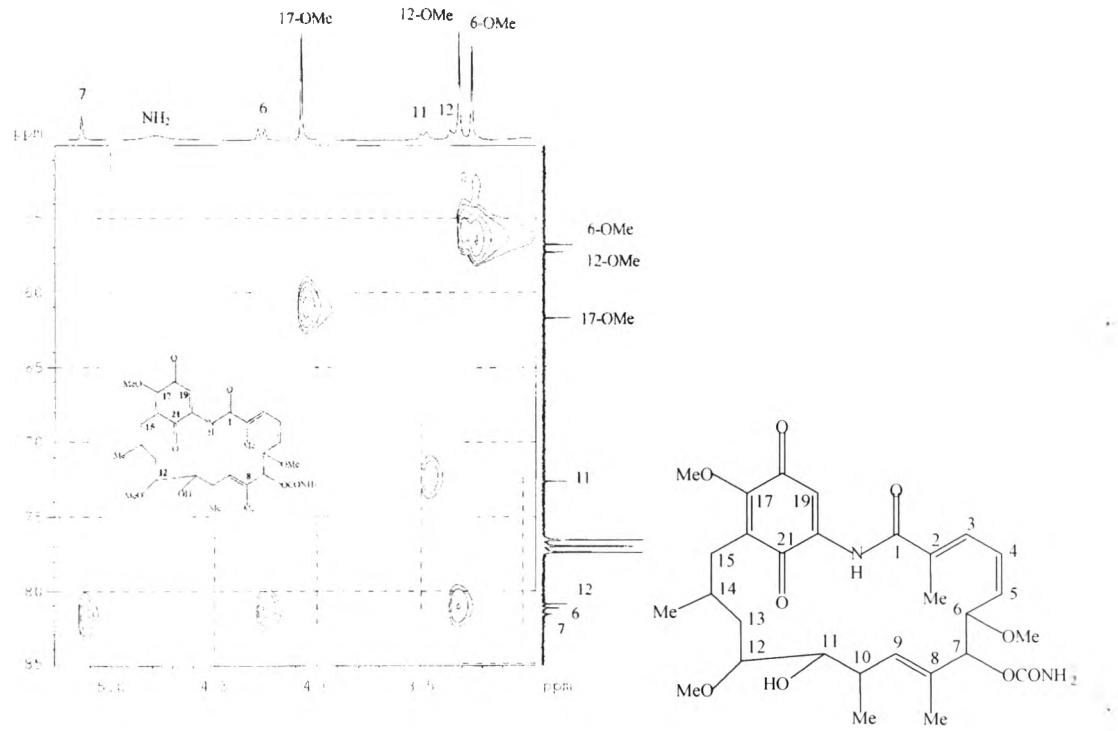


Figure 18 The 300 MHz HMQC spectrum of geldanamycin (KTR75001k) in $CDCl_3$ (expanded from δ_H 5.30-3.00 ppm).

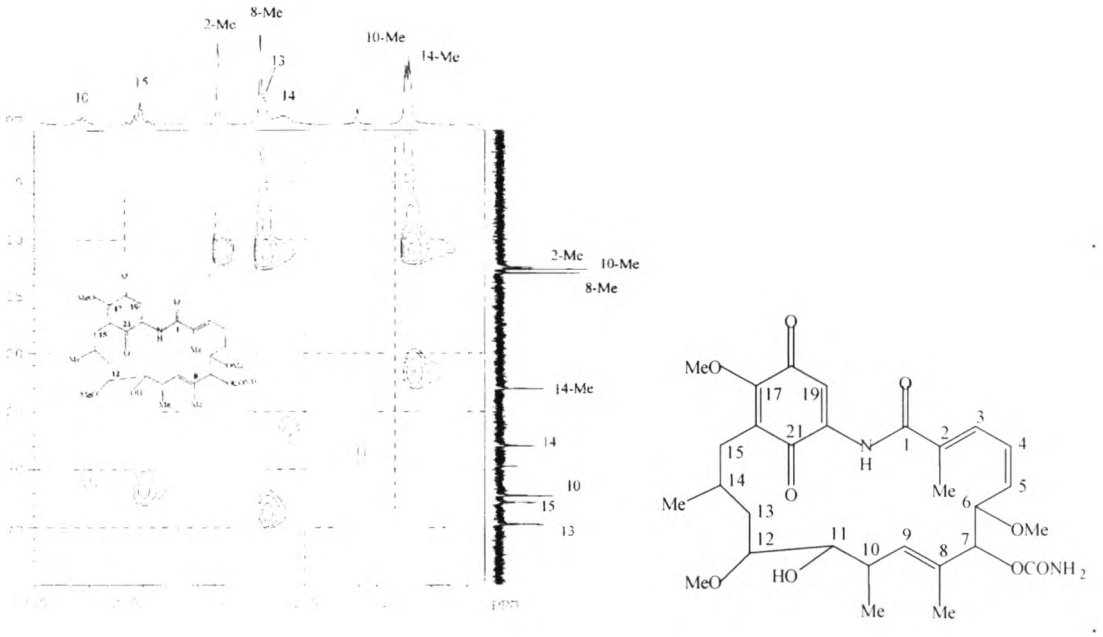


Figure 19 The 300 MHz HMQC spectrum of geldanamycin (KTR75001k) in $CDCl_3$ (expanded from δ_H 3.00-0.50 ppm).

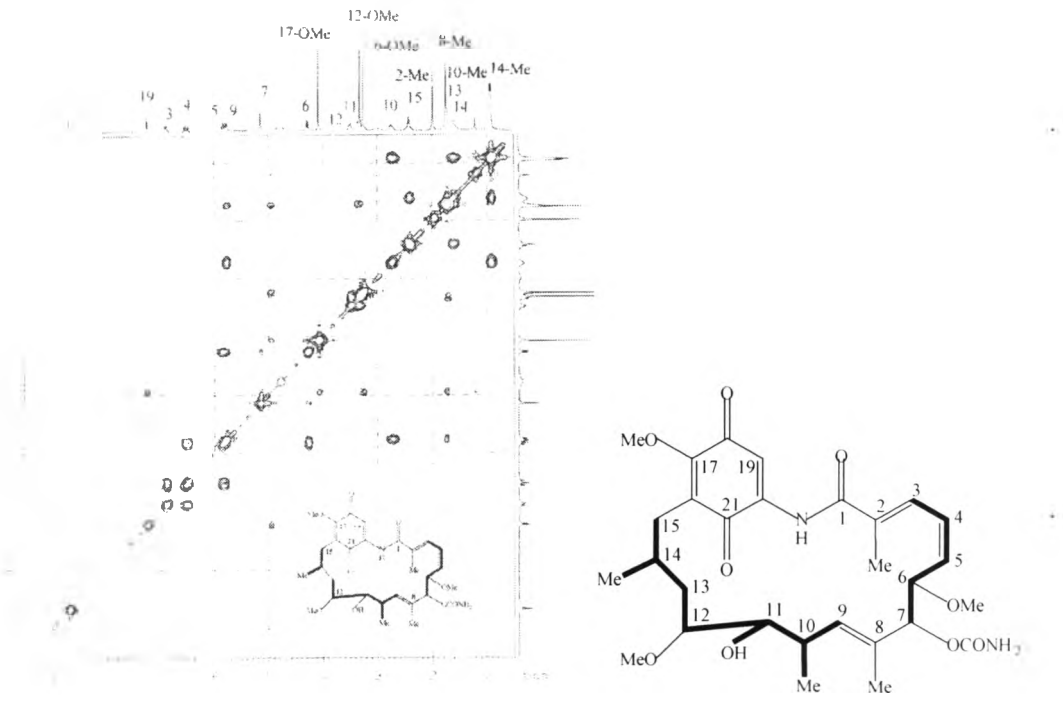


Figure 20 The 300 MHz ^1H-^1H COSY spectrum of geldanamycin (KTR75001k) in $CDCl_3$.

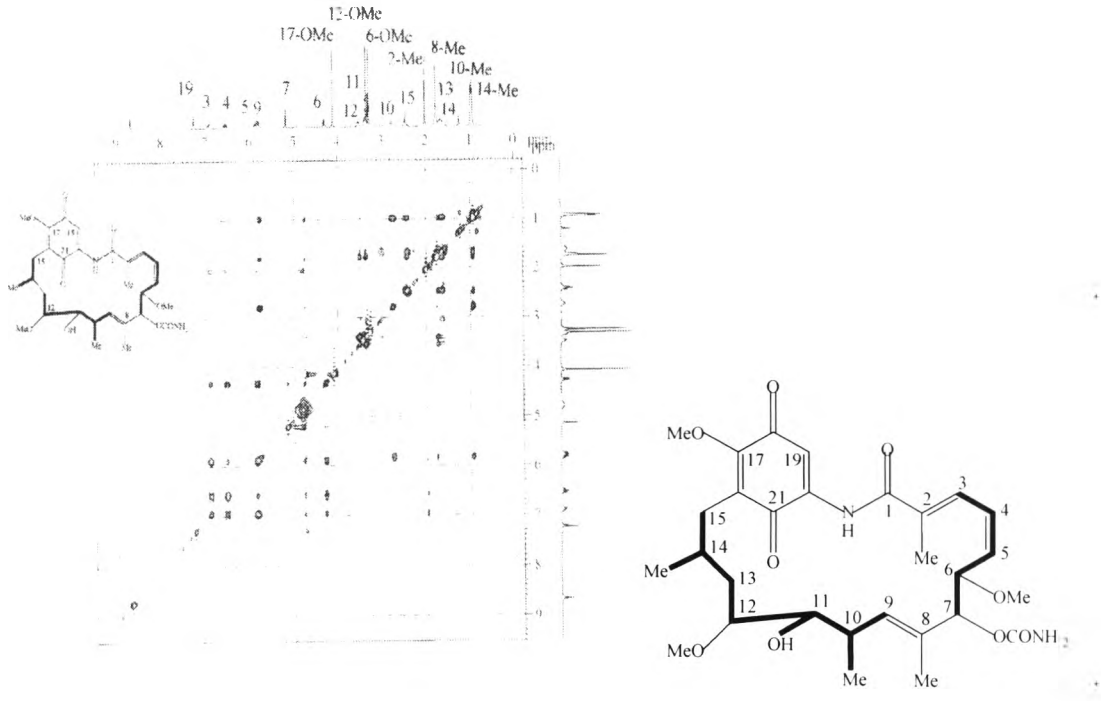


Figure 21 The 300 MHz TOCSY spectrum of geldanamycin (KTR75001k) in $CDCl_3$.

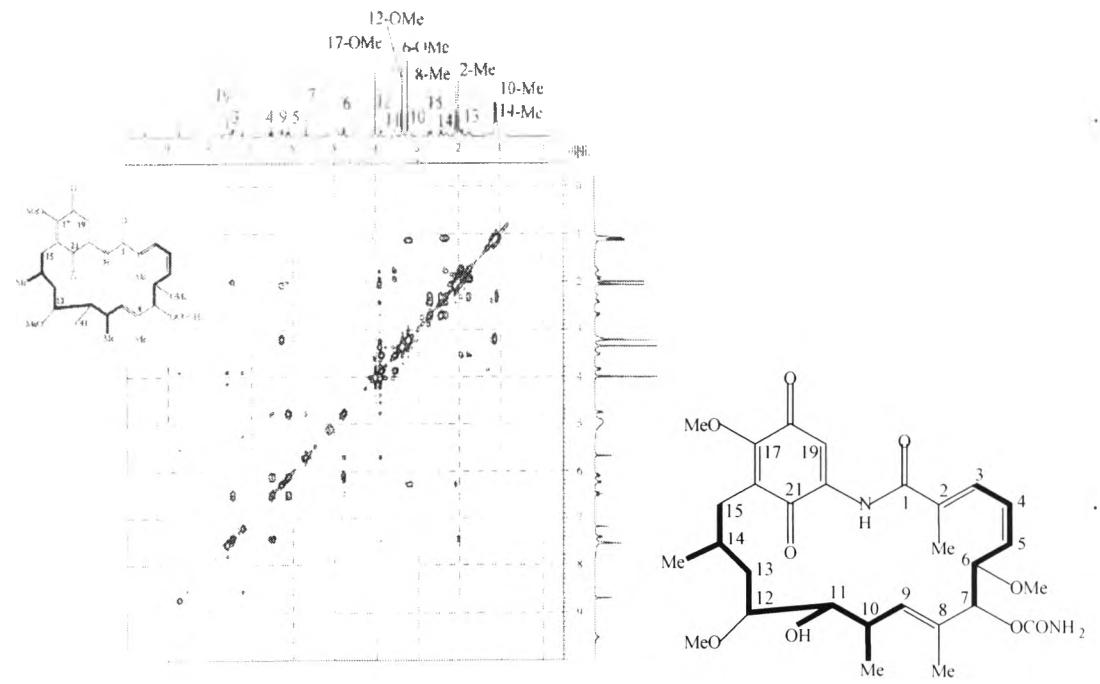


Figure 22 The 300 MHz ^{1}H-^{1}H COSY spectrum of geldanamycin (KTR75001k) in pyridine-d_5.

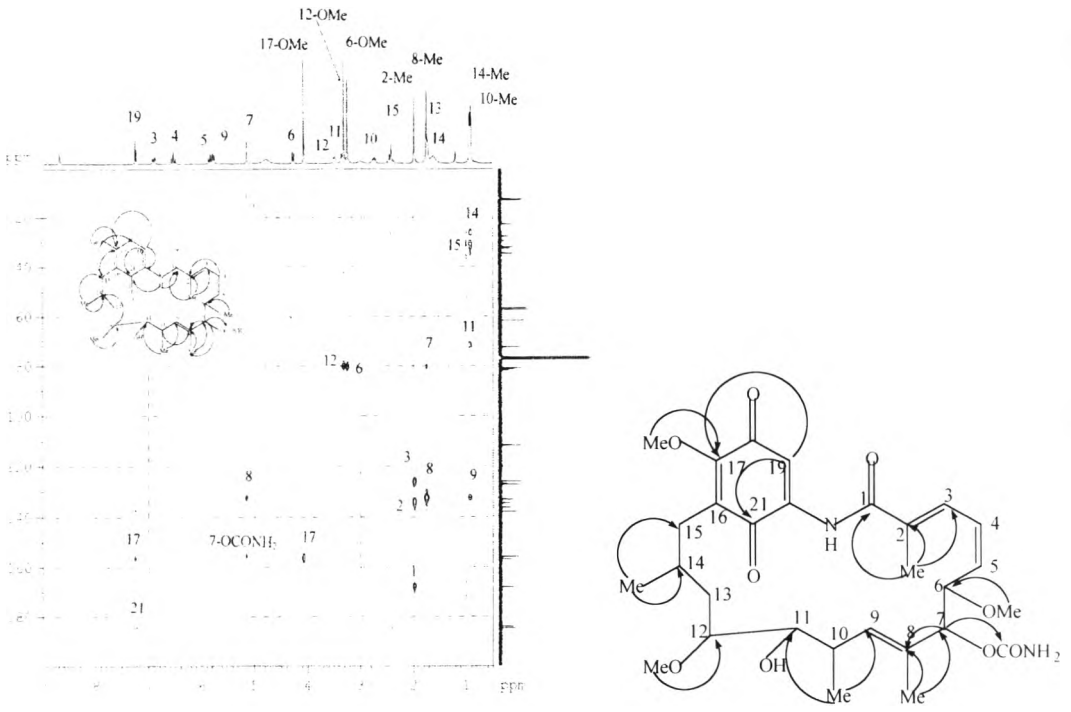


Figure 23 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of geldanamycin (KTR75001k) in $CDCl_3$.

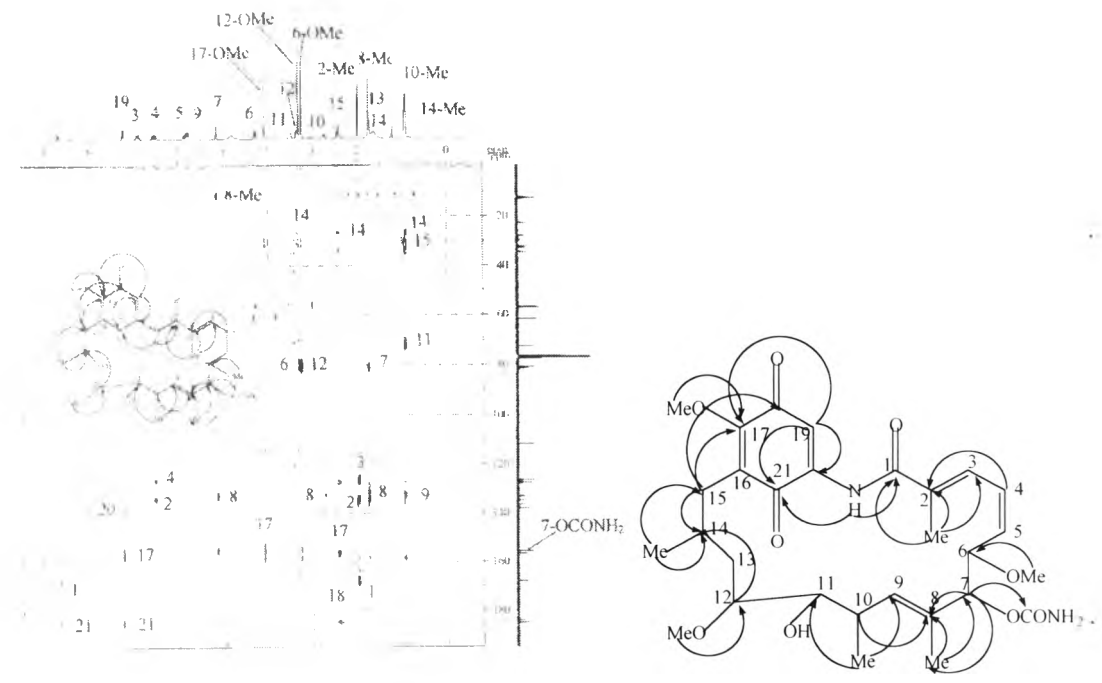


Figure 24 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 4 Hz) of geldanamycin (KTR75001k) in $CDCl_3$.

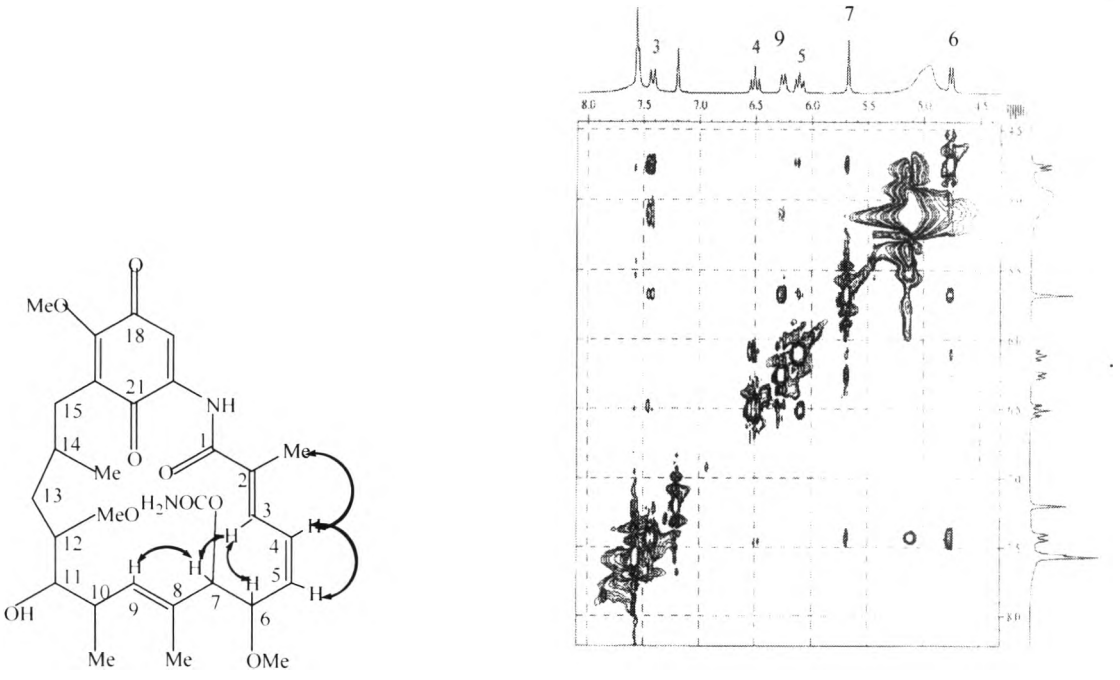


Figure 25 The 300 MHz NOESY spectrum of geldanamycin (KTR75001k) in pyridine-d_5 (expanded from δ_H 10.00-4.30 ppm).

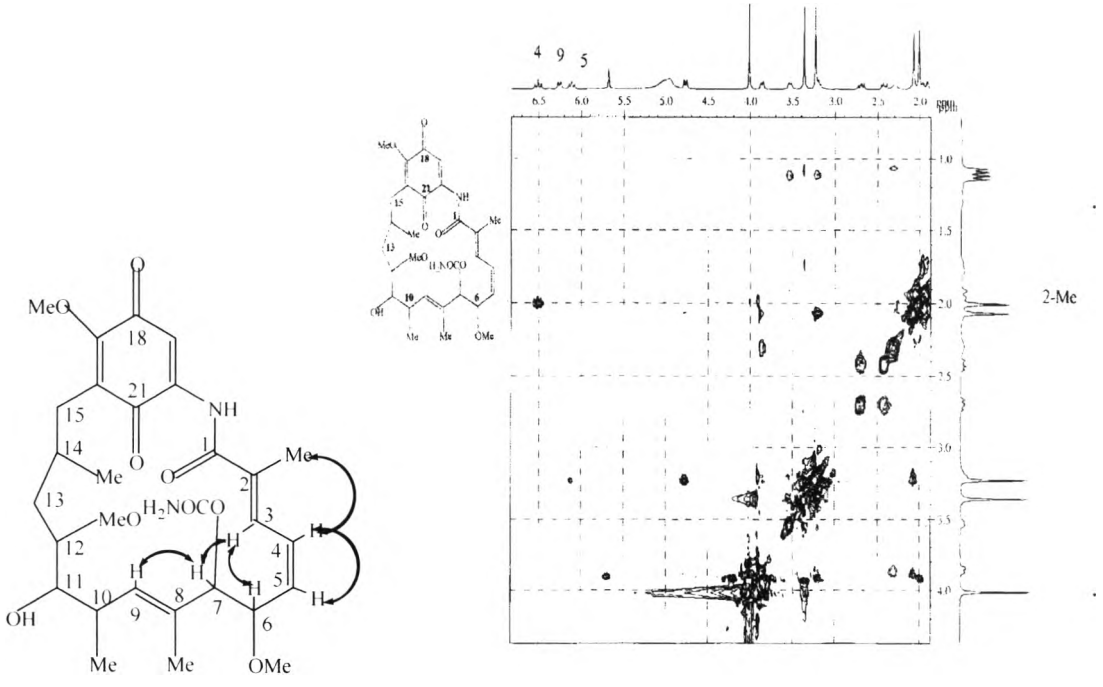


Figure 26 The 300 MHz NOESY spectrum of geldanamycin (KTR75001k) in pyridine-d_5 (expanded from δ_H 6.80-1.90 ppm)

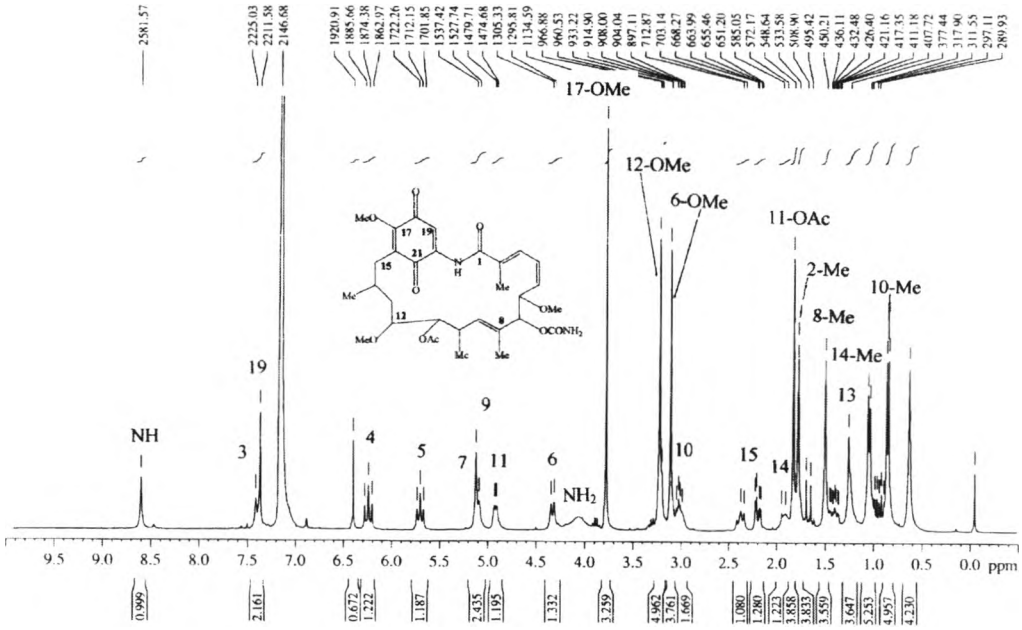


Figure 27 The 300 MHz ^{1}H-NMR spectrum of 11-*O*-acetylgeldanamycin in $CDCl_3$+ benzene-d_6.

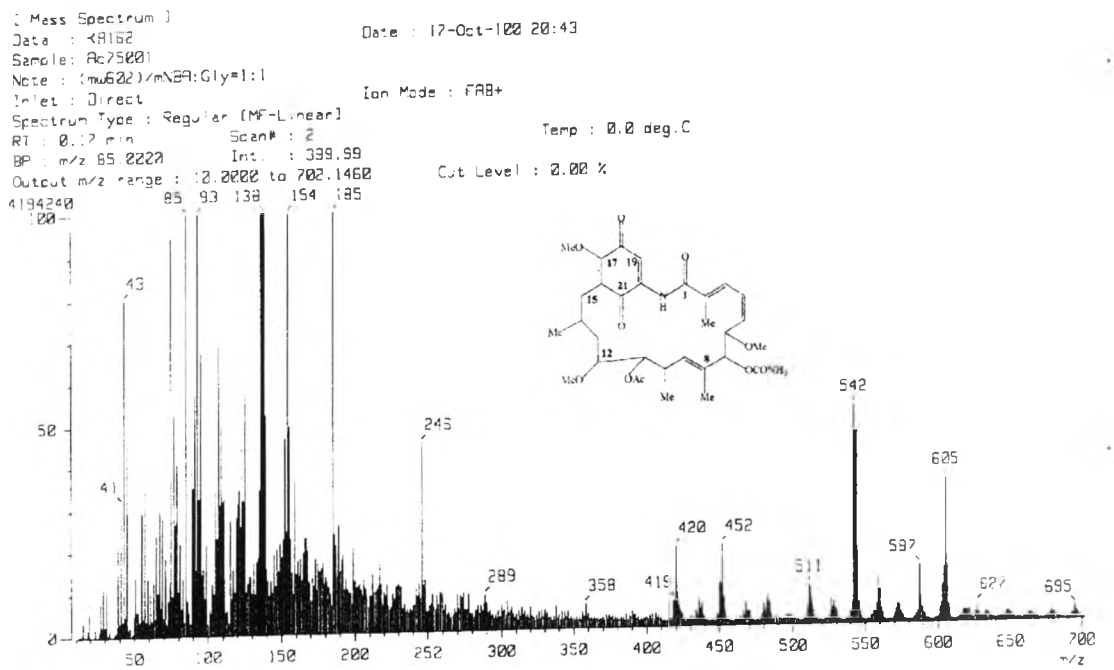


Figure 28 The FAB mass spectrum of 11-*O*-acetylgeldanamycin.

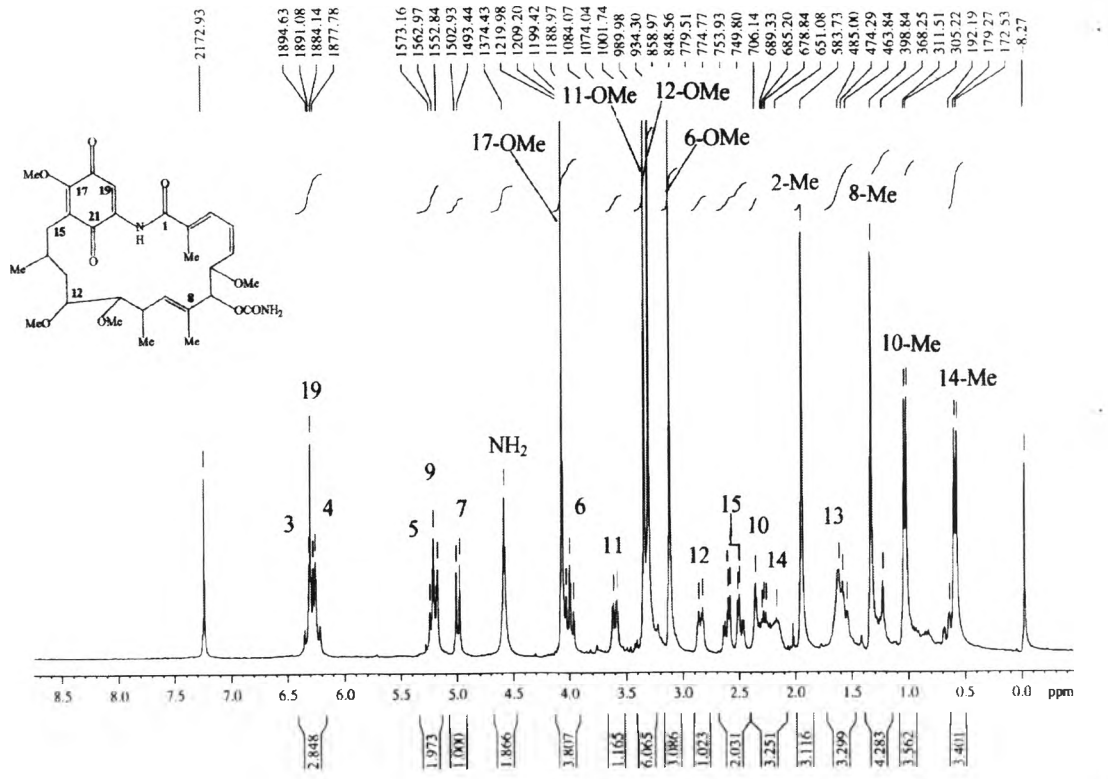


Figure 29 The 300 MHz ^{1}H-NMR spectrum of 11-*O*-methylgeldanamycin in $CDCl_3$.

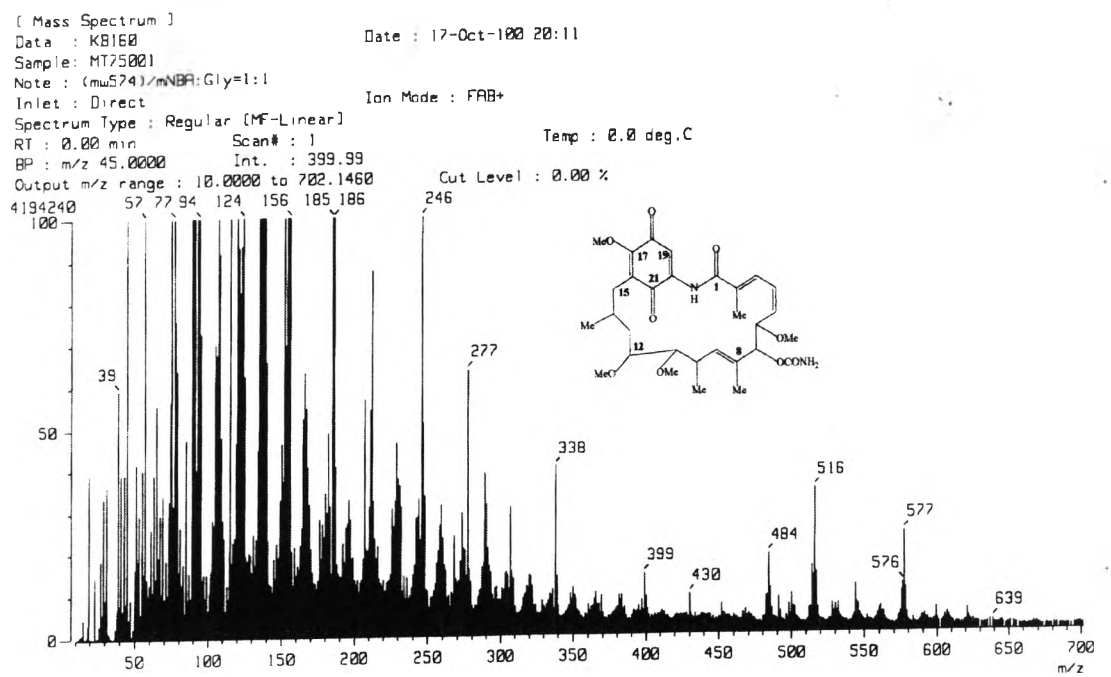


Figure 30 The FAB mass spectrum of 11-*O*-methylgeldanamycin.

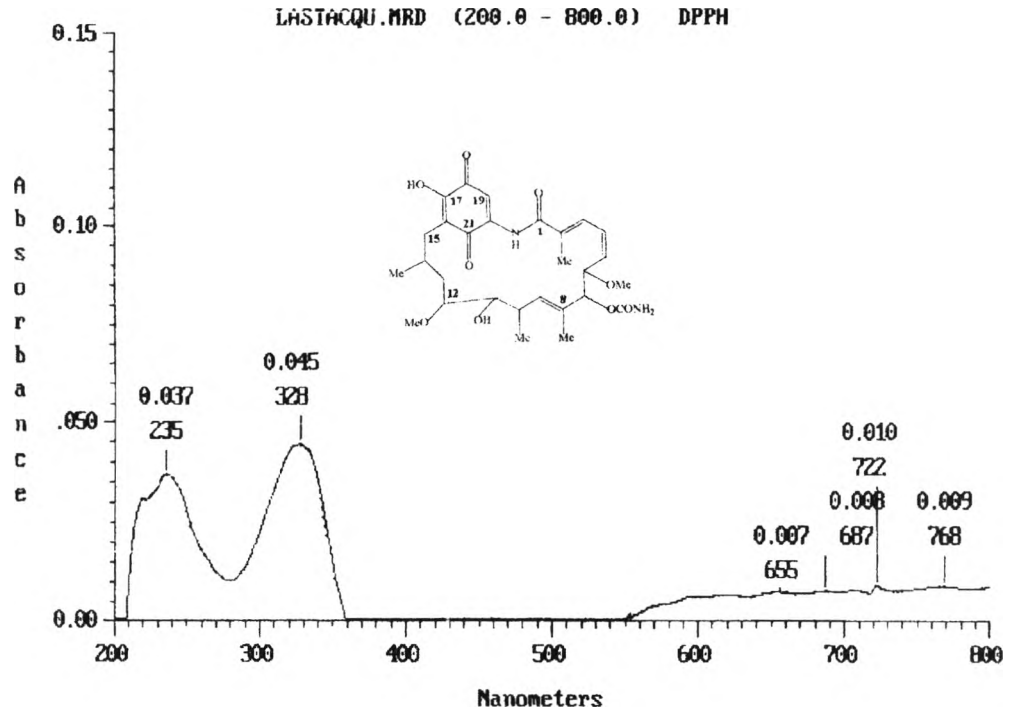


Figure 31 The UV spectrum of 17-*O*-demethylgeldanamycin (KTR75008k).

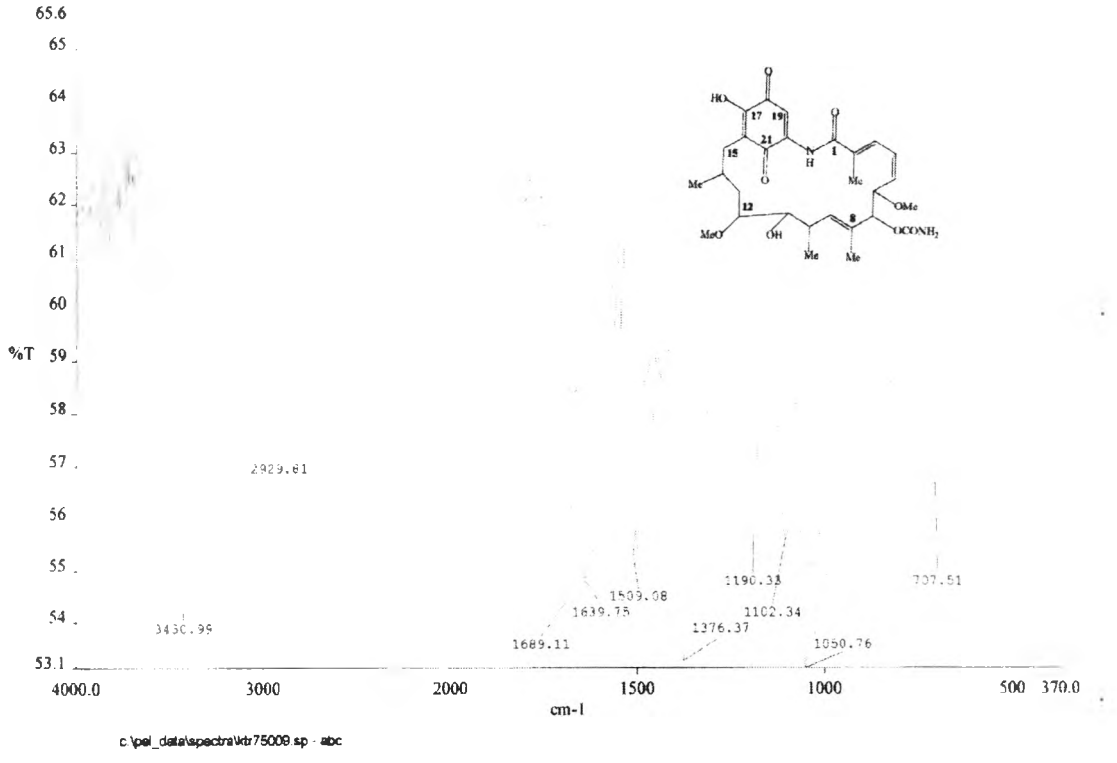


Figure 32 The IR spectrum of 17-*O*-demethylgeldanamycin (KTR75008k).

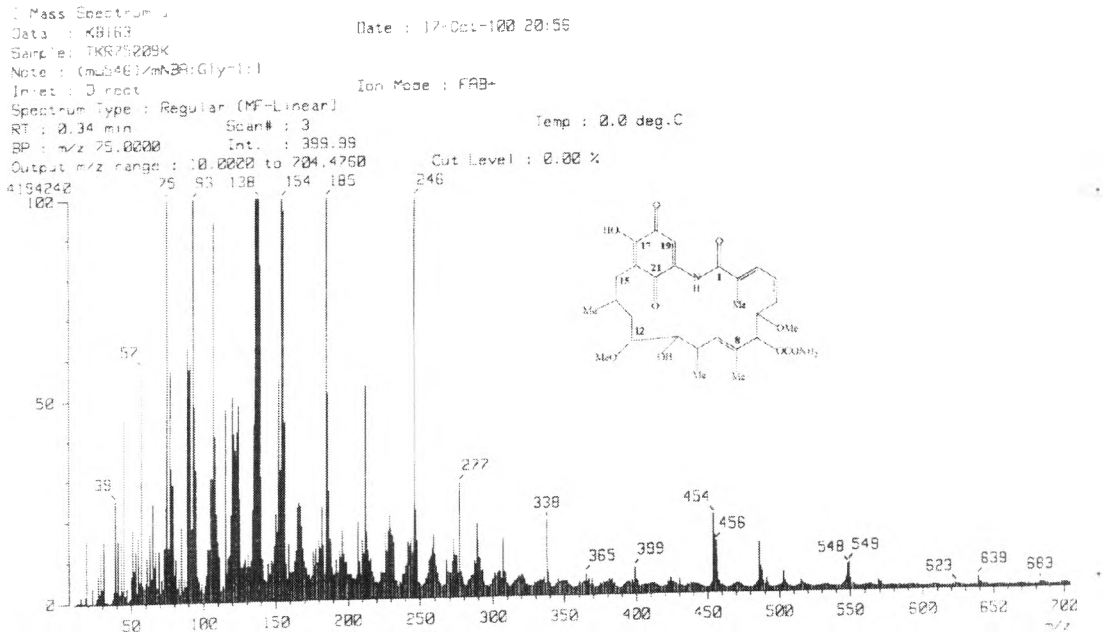


Figure 33 The FAB mass spectrum of 17-*O*-demethylgeldanamycin (KTR75008k).

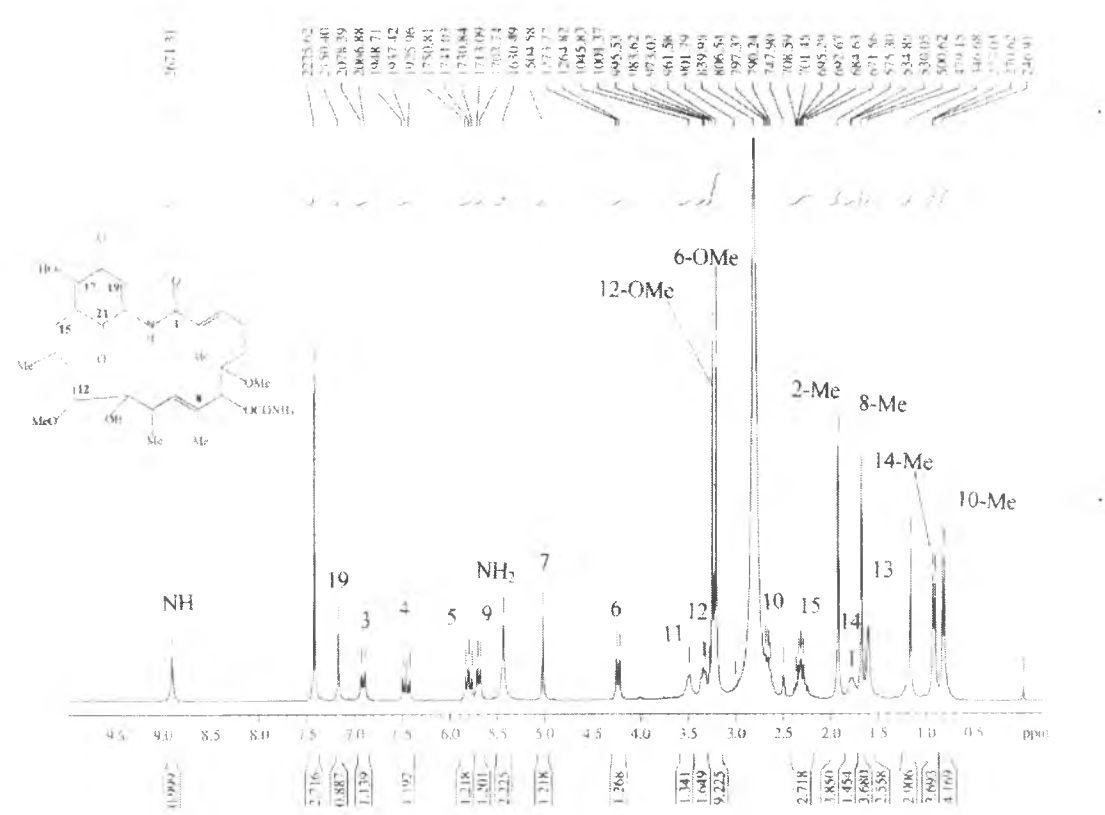


Figure 34 The 300 MHz ^{1}H-NMR spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6.

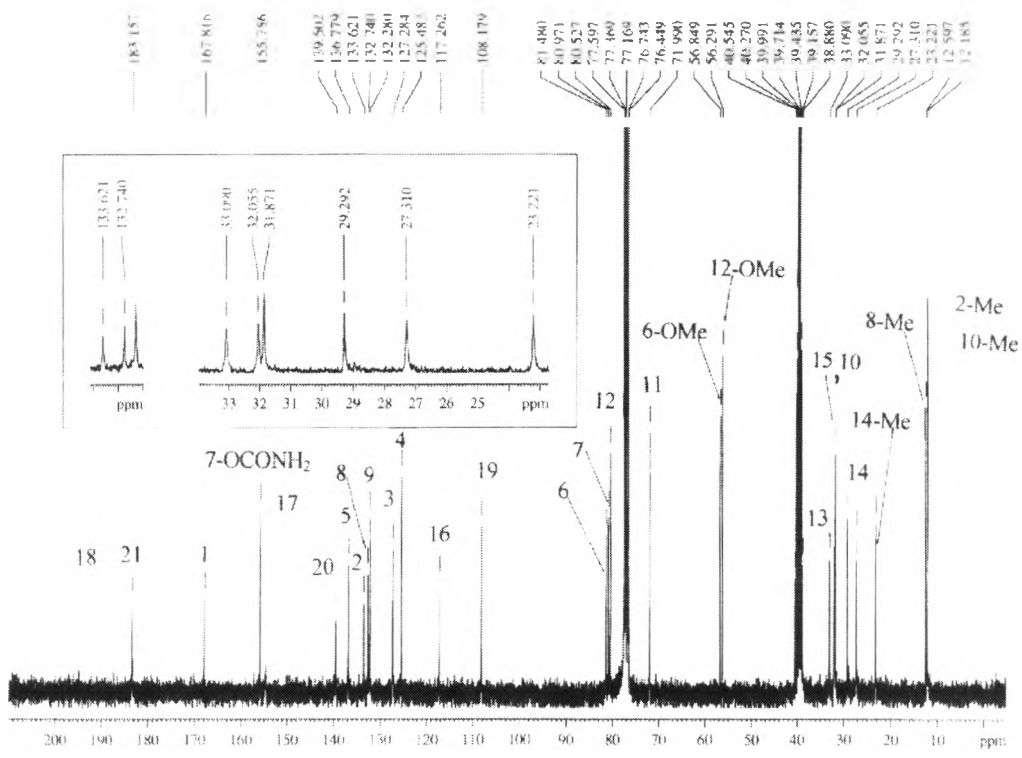


Figure 35 The 75 MHz ^{13}C-NMR spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6.

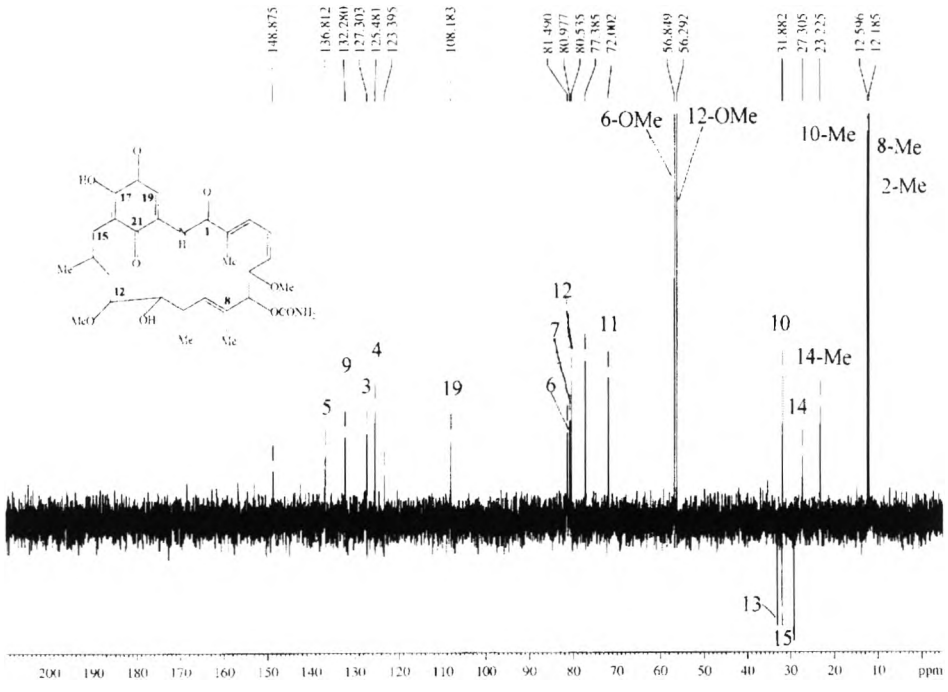


Figure 36 The 75 MHz DEPT 135 spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6.

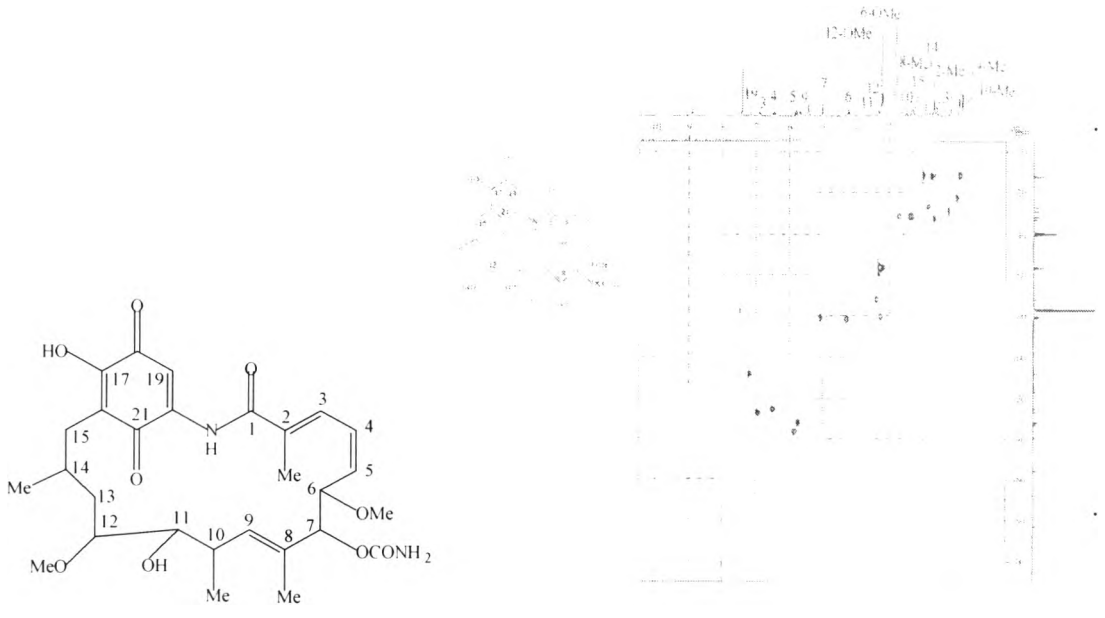


Figure 37 The 300 MHz HMQC spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6.

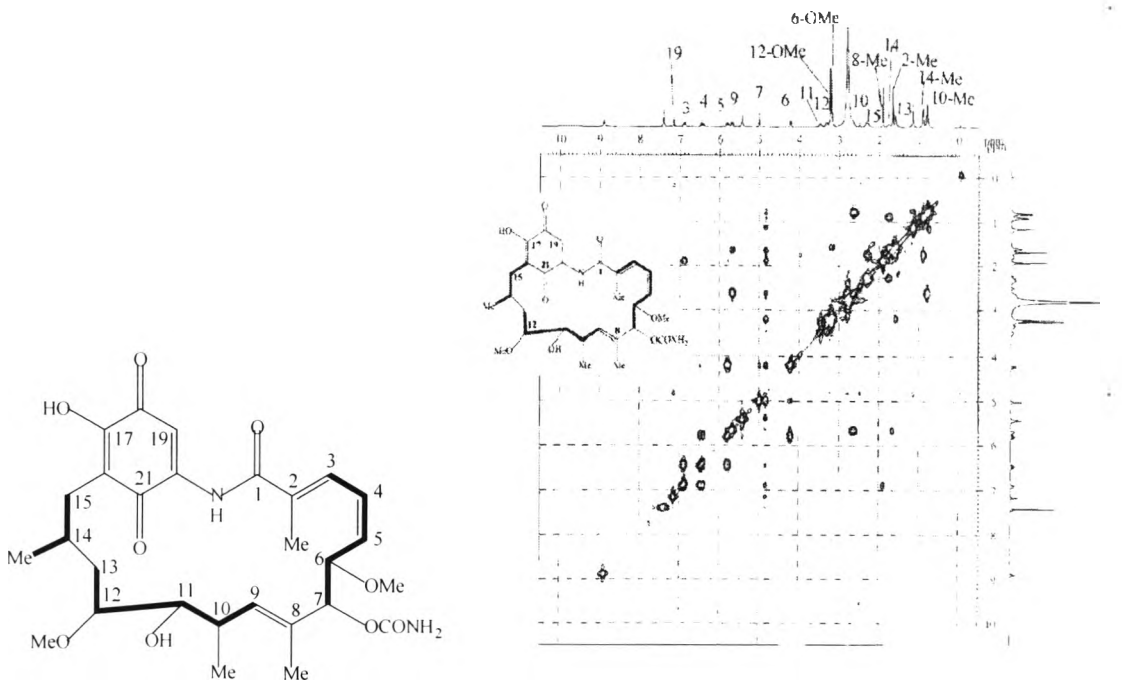


Figure 38 The 300 MHz ^1H-^1H COSY spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6.

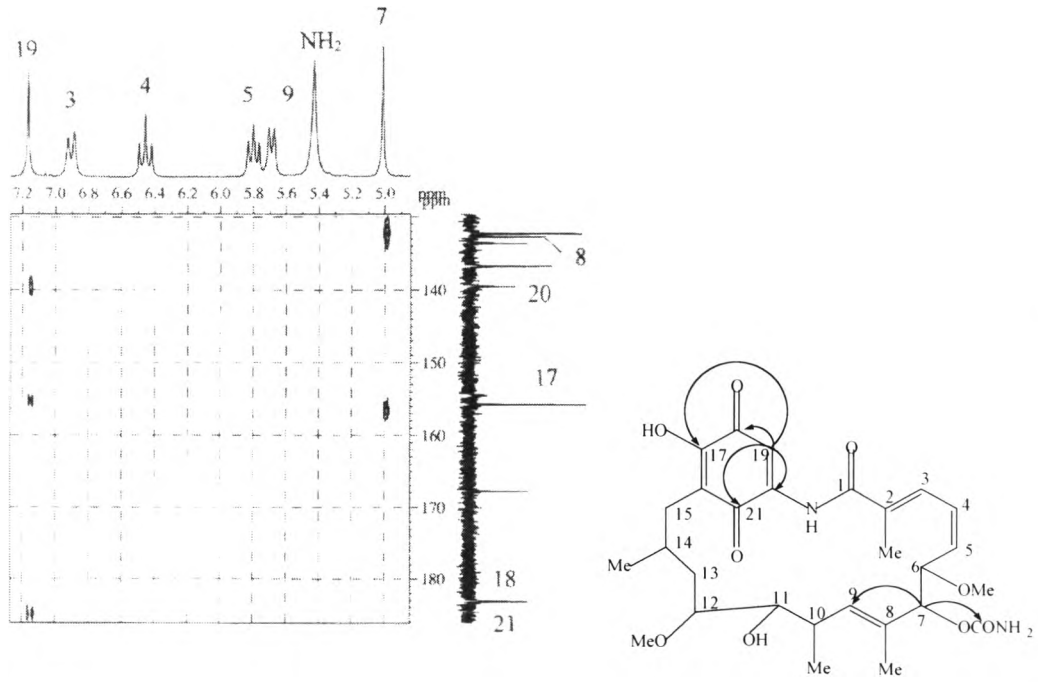


Figure 39 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 7.20-4.90 ppm).

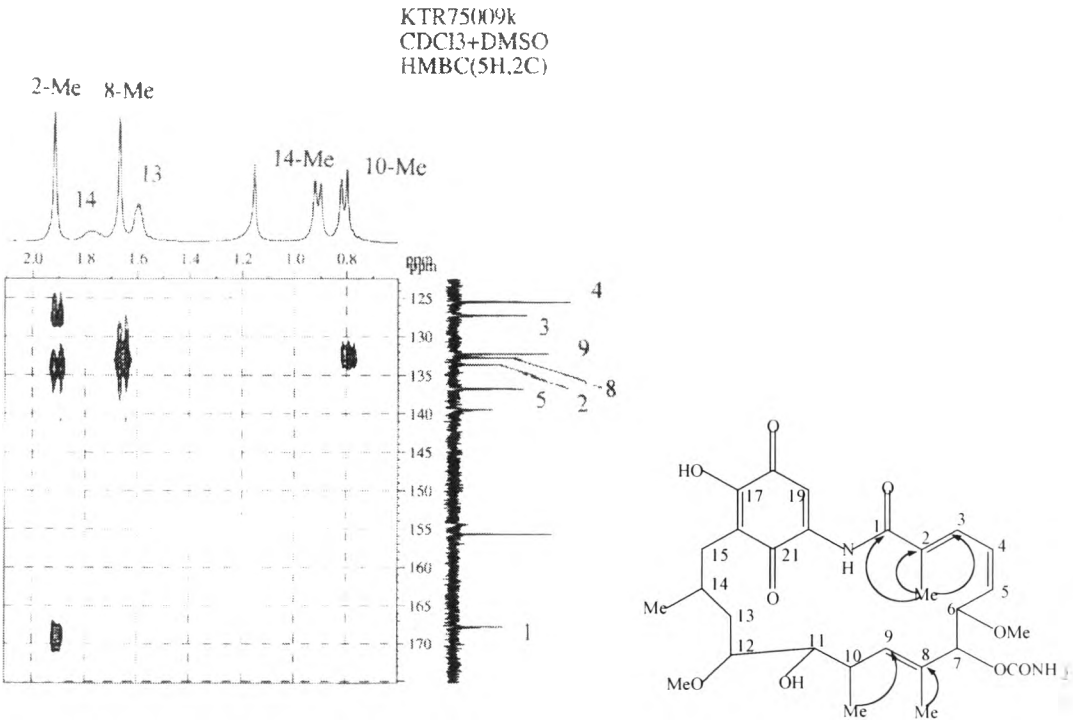


Figure 40 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 2.10-0.60 ppm).

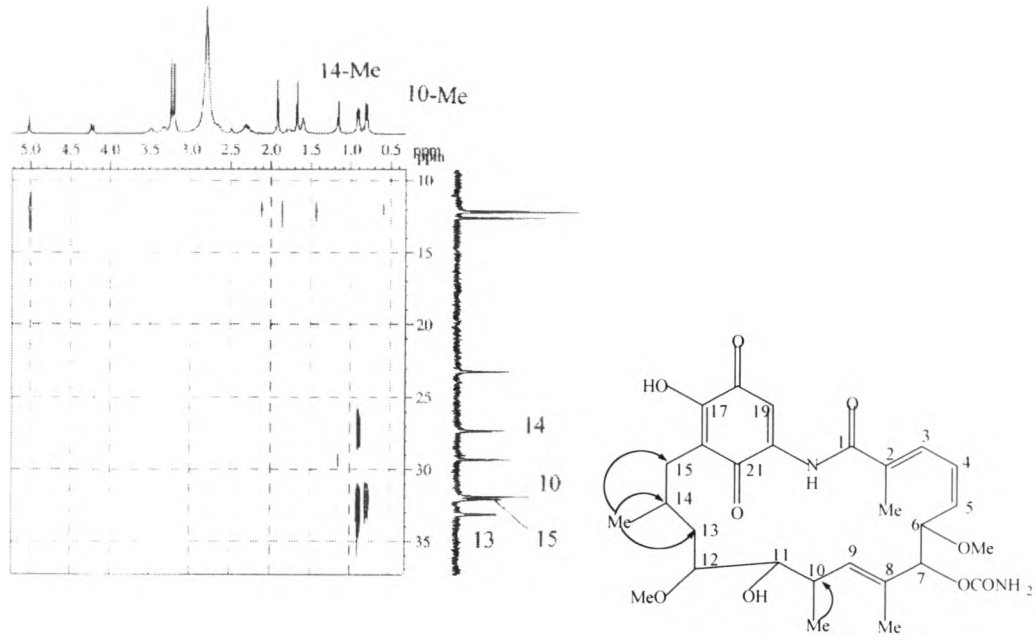


Figure 41 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 5.20-0.30 ppm).

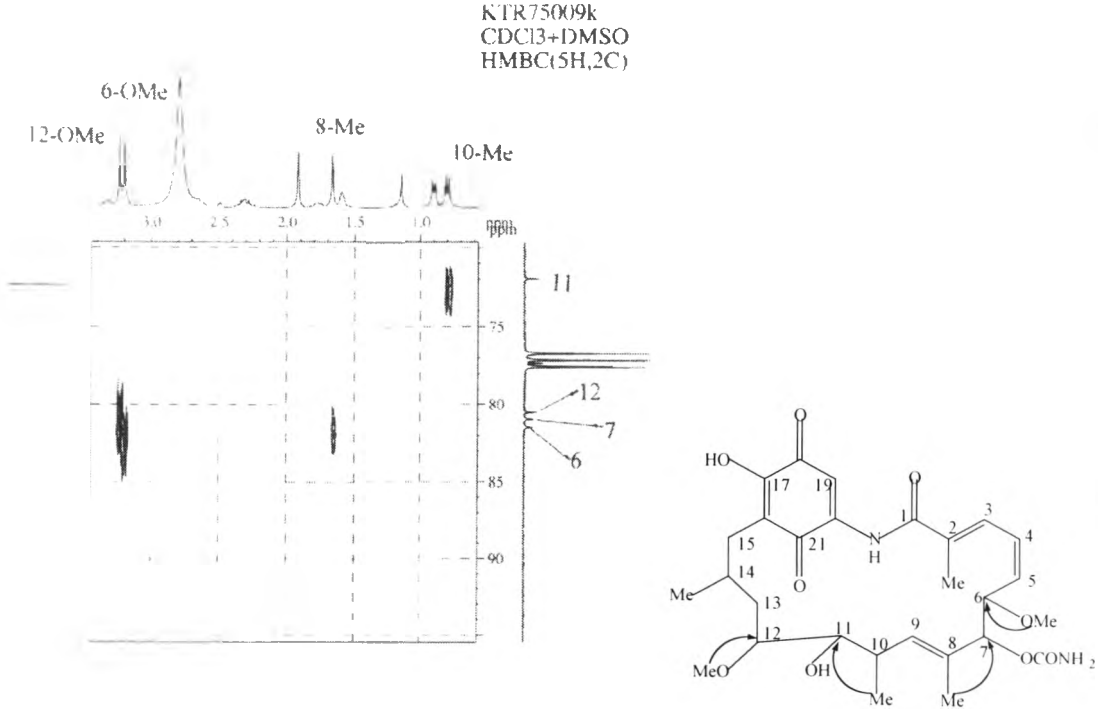


Figure 42 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 3.40-0.60 ppm).

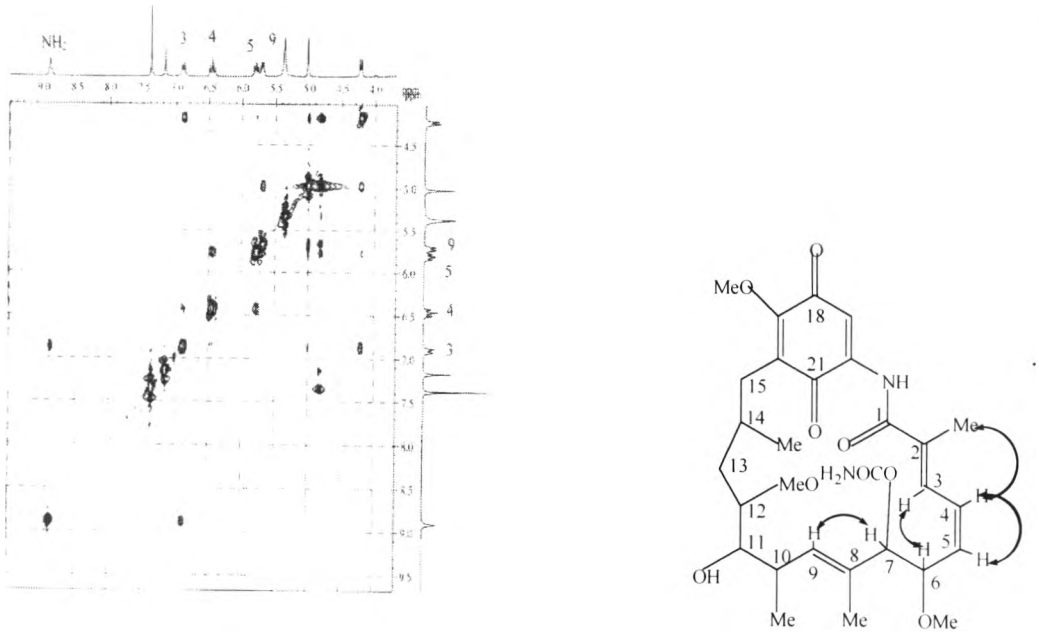


Figure 43 The 300 MHz NOESY spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 9.50-3.80 ppm).

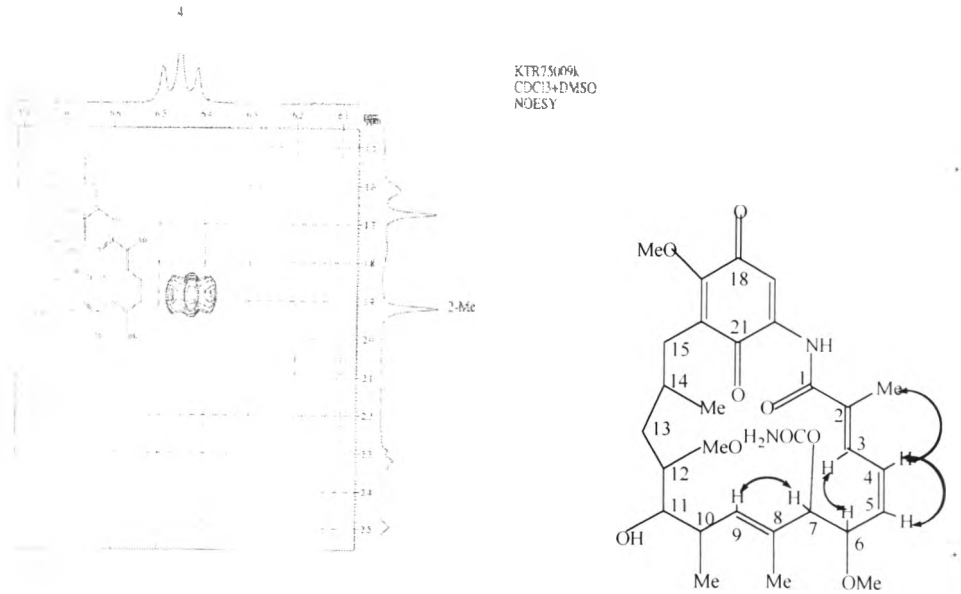


Figure 44 The 300 MHz NOESY spectrum of 17-*O*-demethylgeldanamycin (KTR75008k) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 2.55-1.46 ppm).

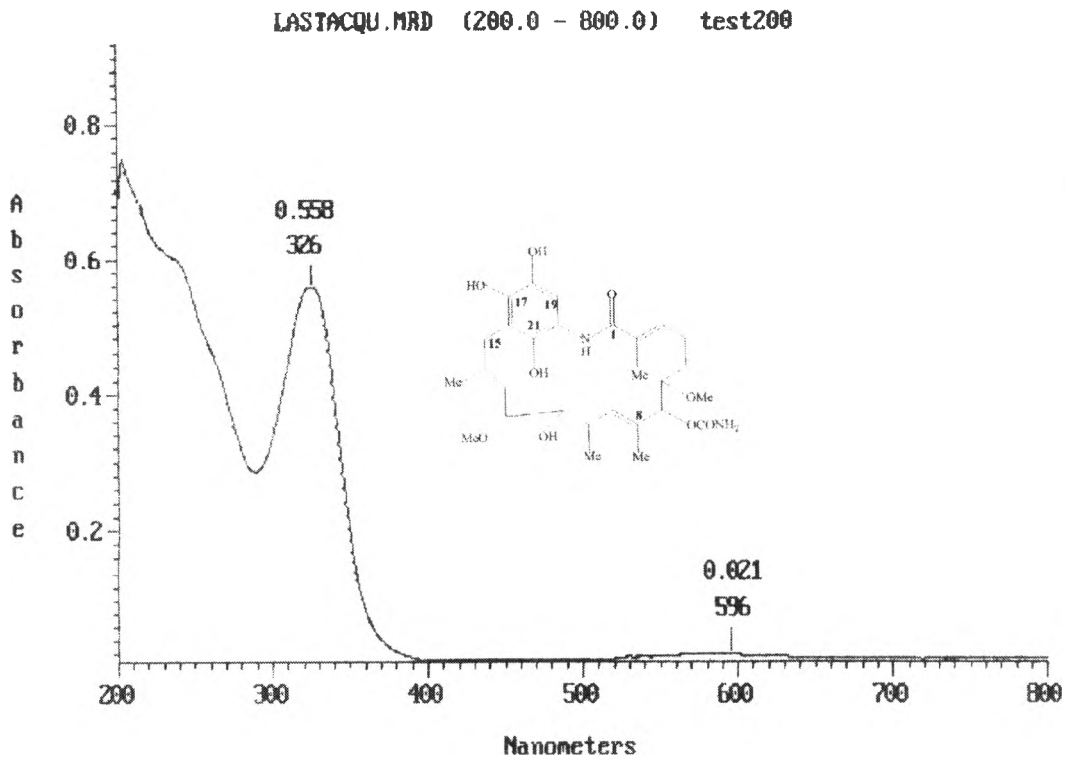


Figure 45 The UV spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010).

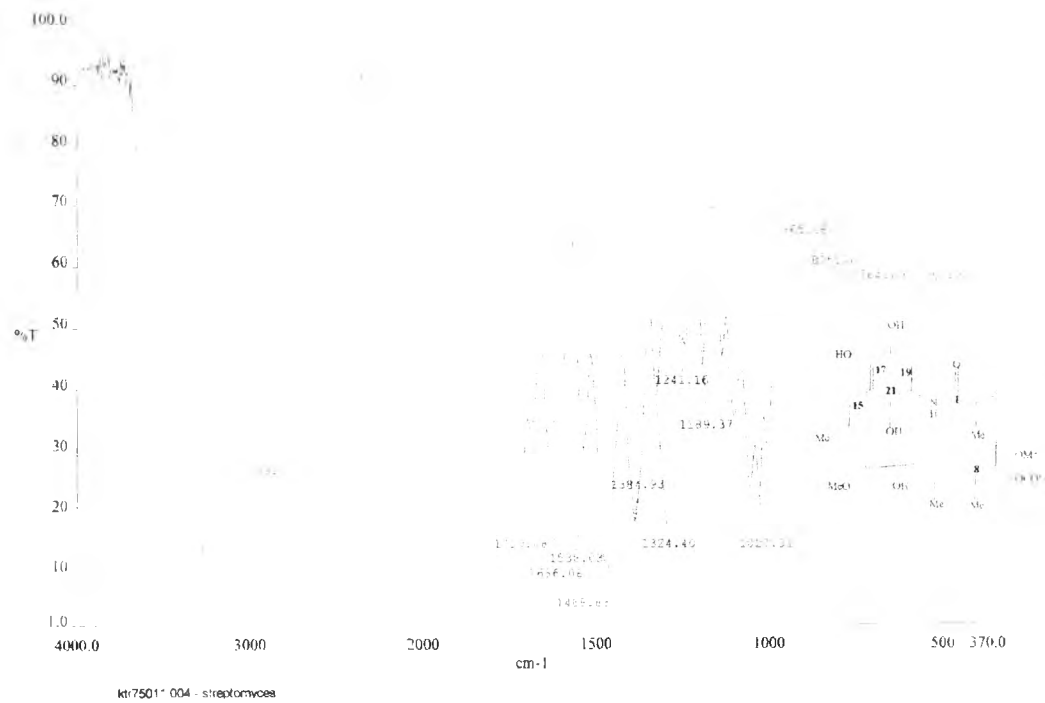


Figure 46 The IR spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010).

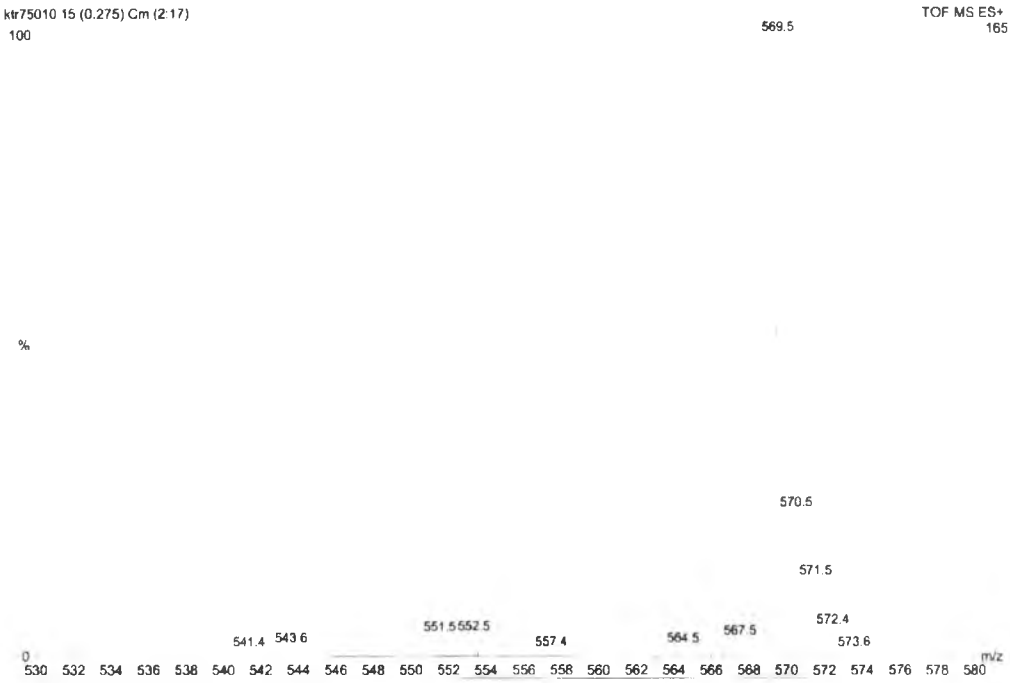


Figure 47 The ESI TOF mass spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010).

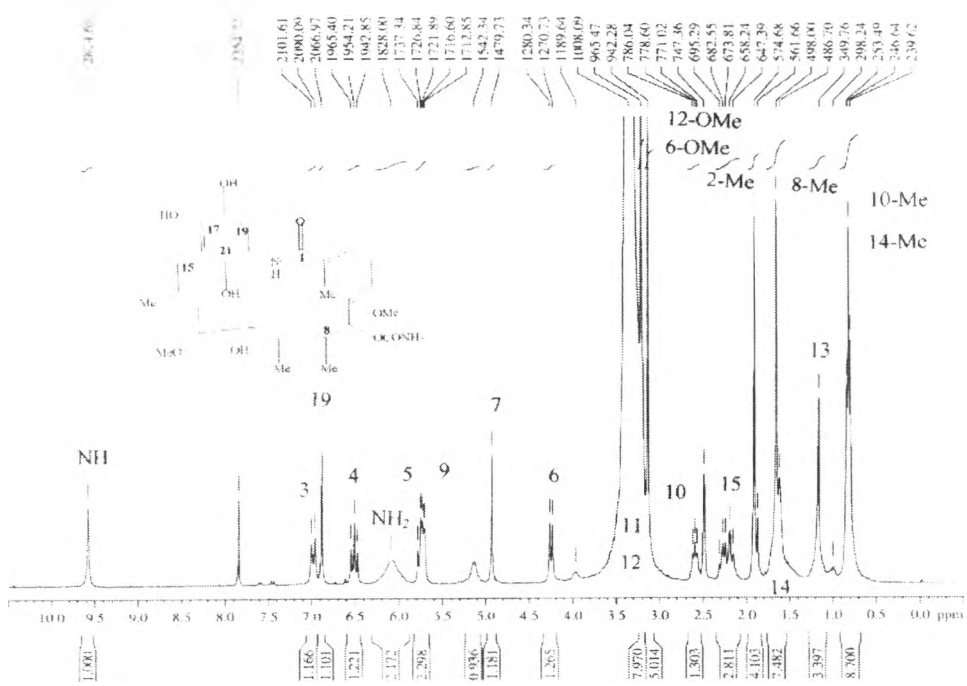


Figure 48 The 300 MHz ^{1}H-NMR spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6.

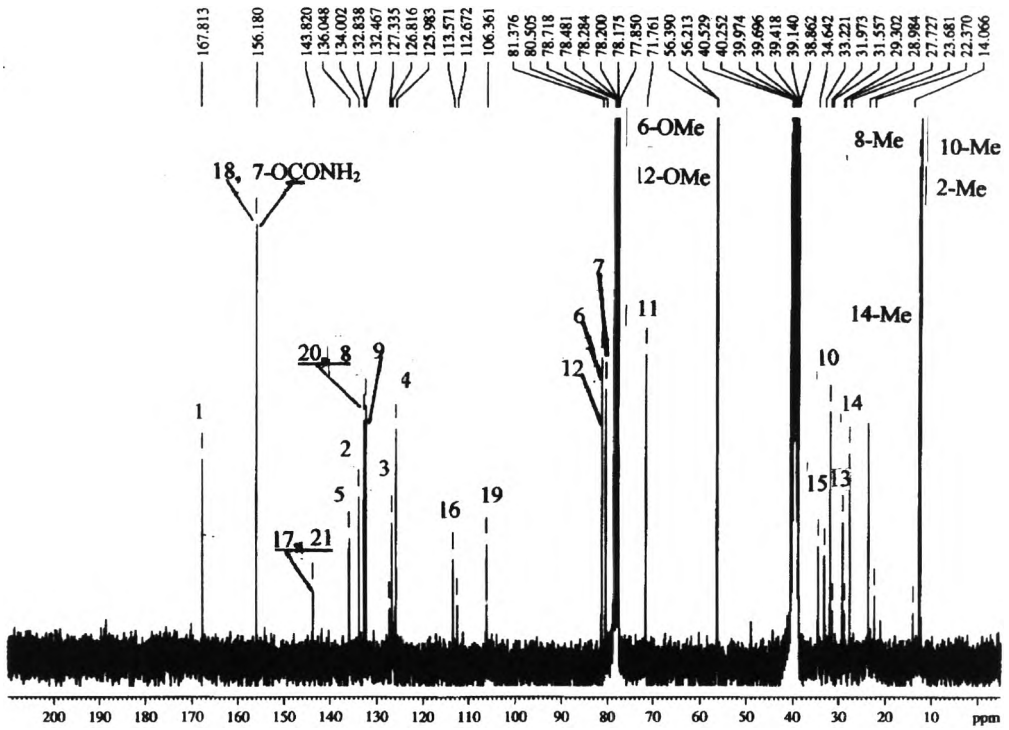


Figure 49 The 75 MHz ^{13}C-NMR spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6.

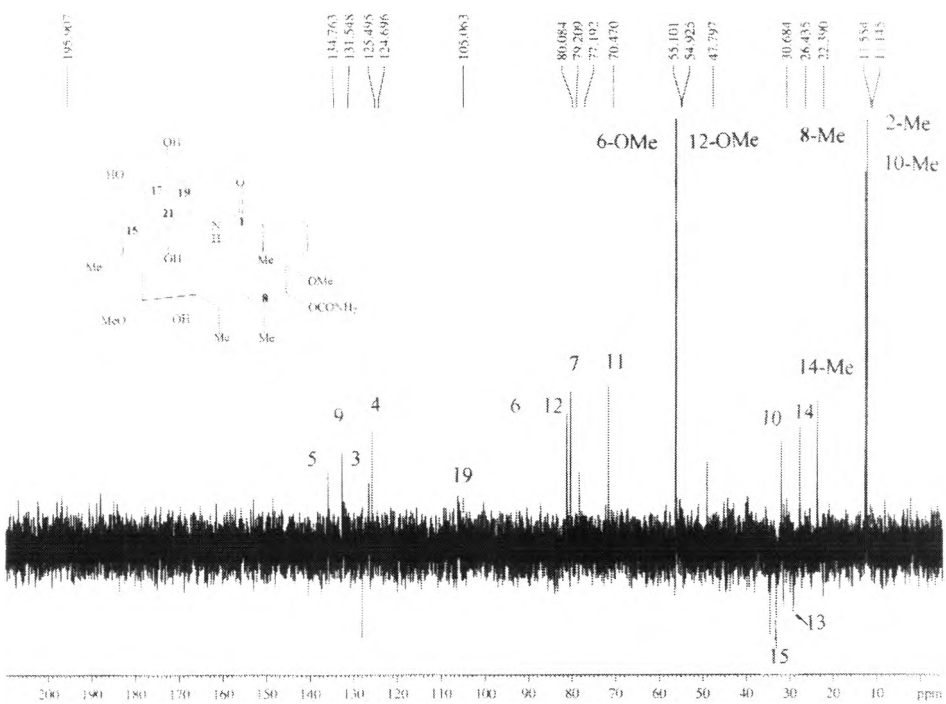


Figure 50 The 75 MHz DEPT 135 spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6.

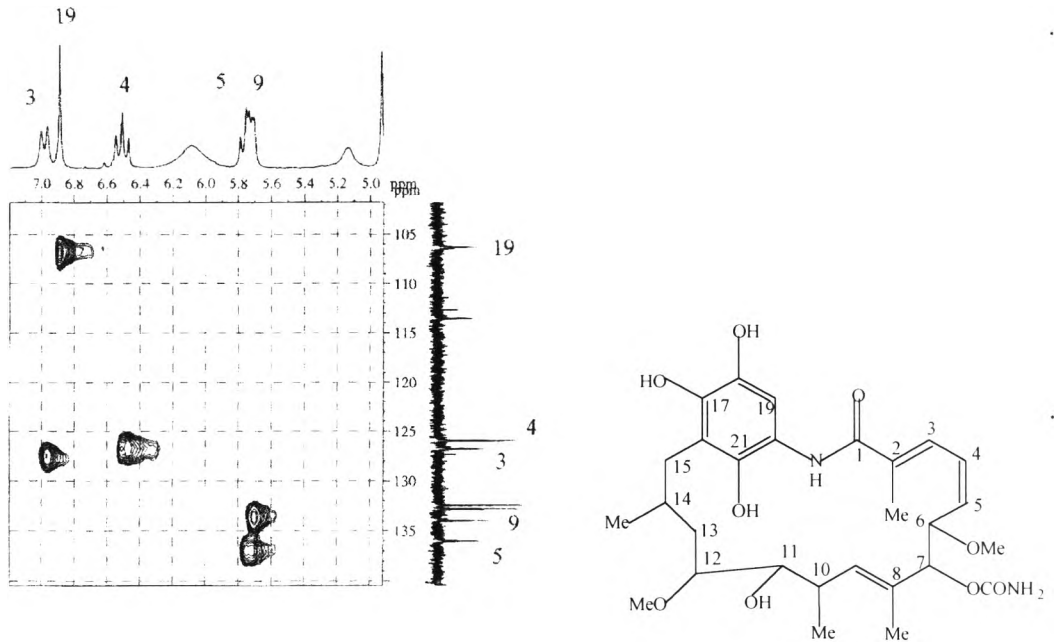


Figure 51 The 300 MHz HMQC spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 7.20-5.00 ppm).

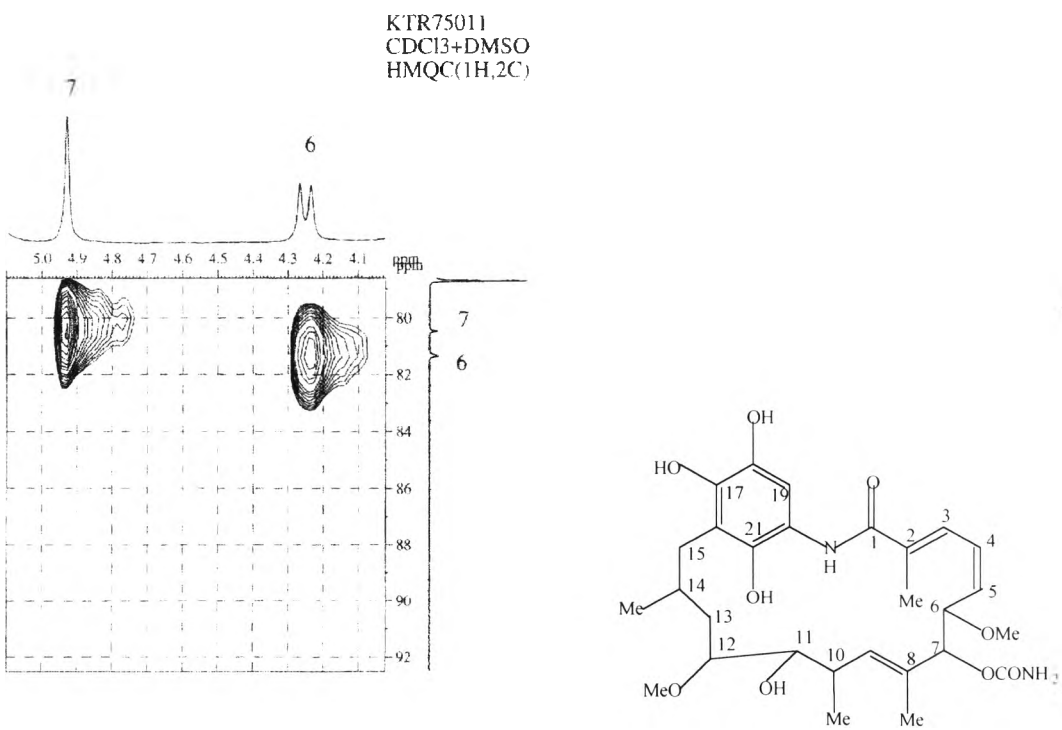


Figure 52 The 300 MHz HMQC spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 5.10-4.02 ppm).

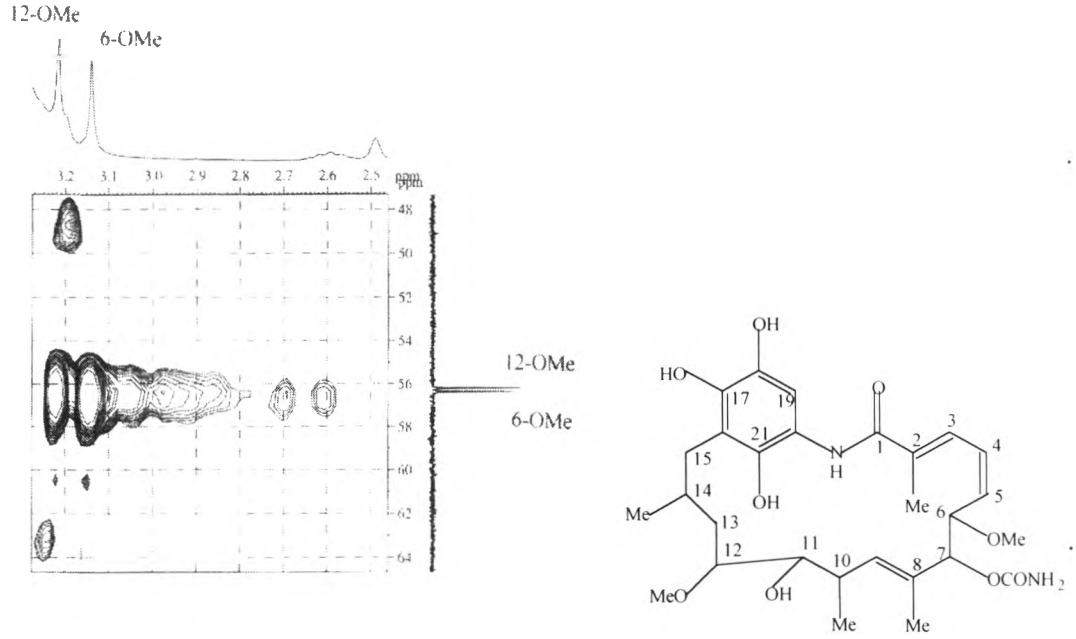


Figure 53 The 300 MHz HMQC spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 3.25-2.46 ppm).

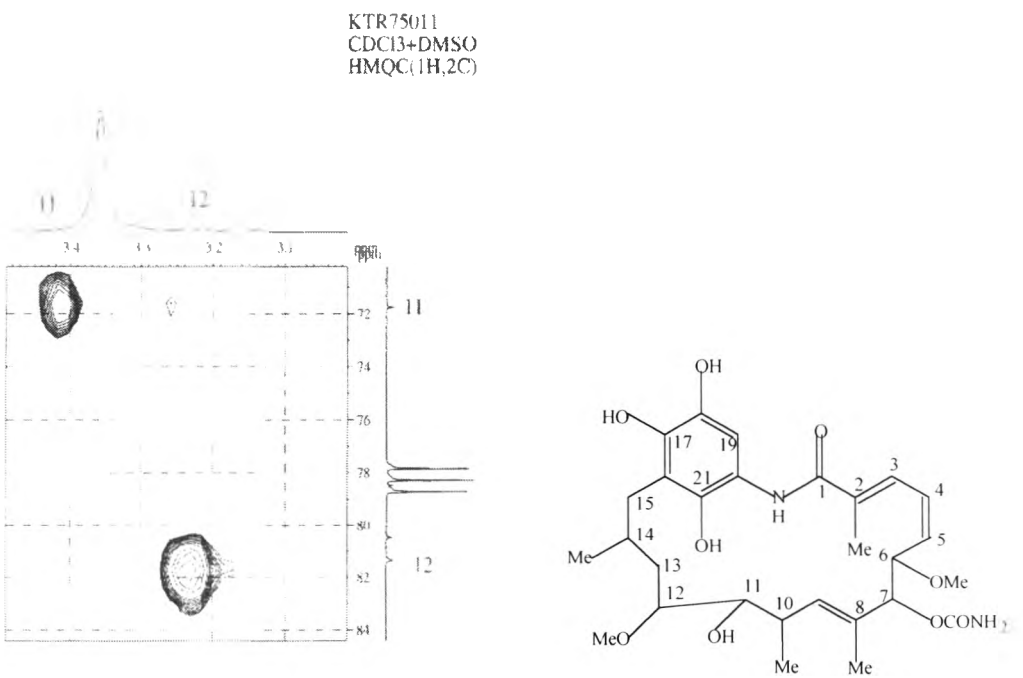


Figure 54 The 300 MHz HMQC spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 3.50-3.00 ppm).

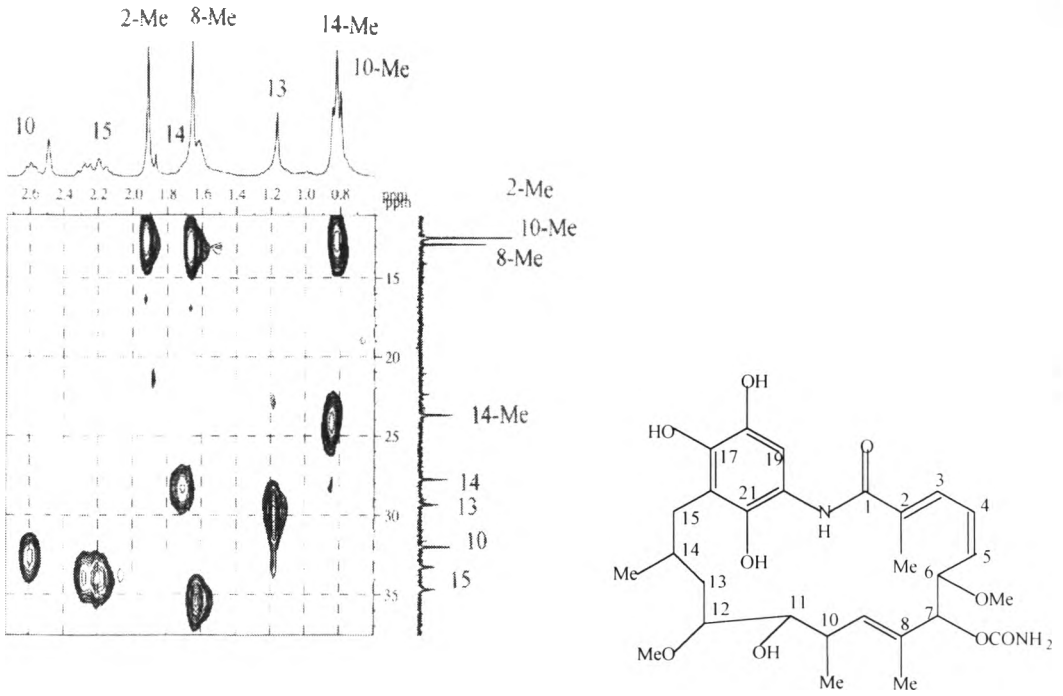


Figure 55 The 300 MHz HMQC spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 2.70-0.60 ppm).

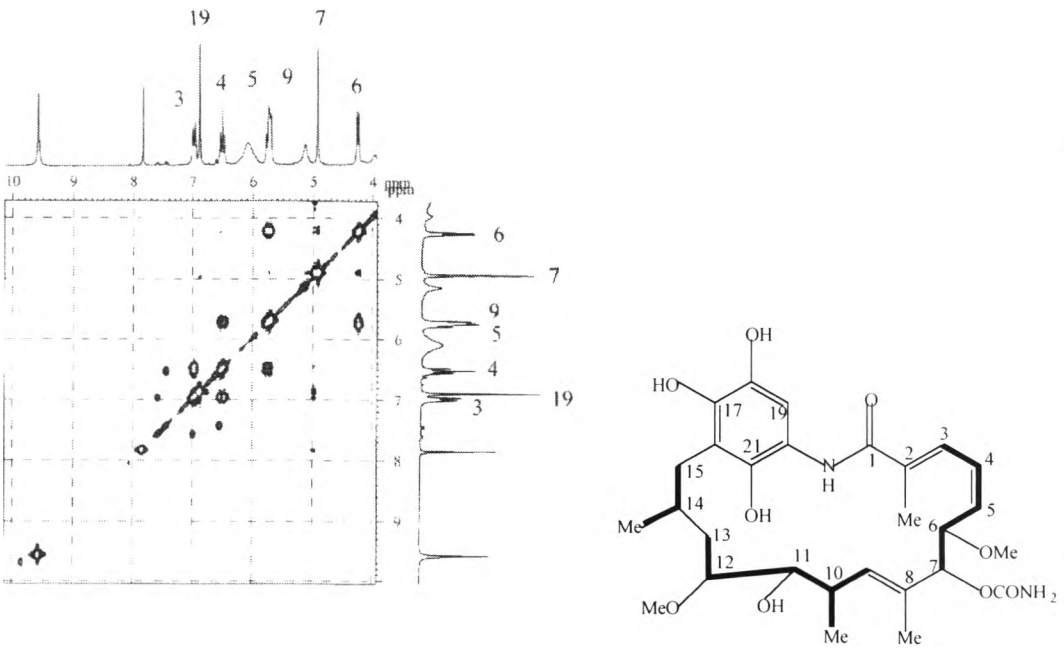


Figure 56 The 300 MHz ^{1}H-^{1}H COSY spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 7.50-3.60 ppm).

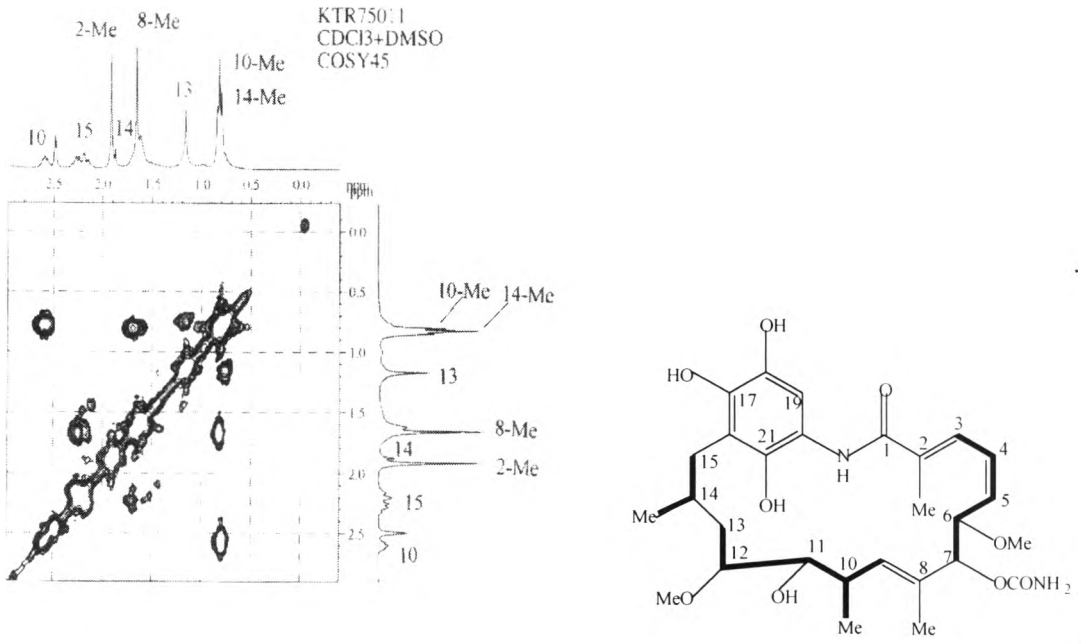


Figure 57 The 300 MHz ^{1}H-^{1}H COSY spectrum of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 3.00-0.30 ppm).

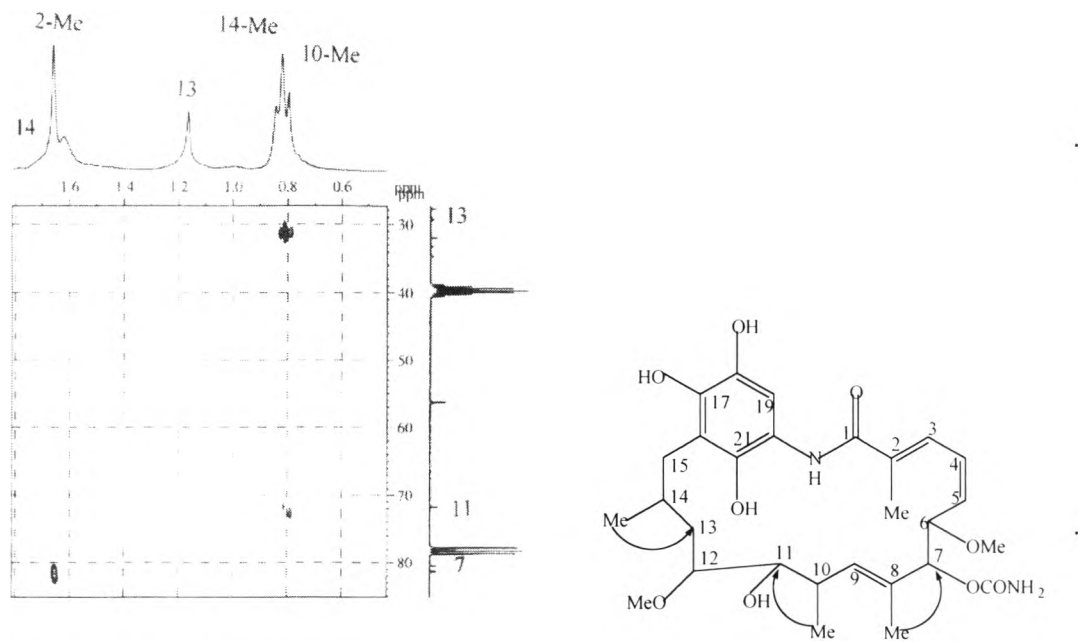


Figure 58 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 1.80-0.40 ppm).

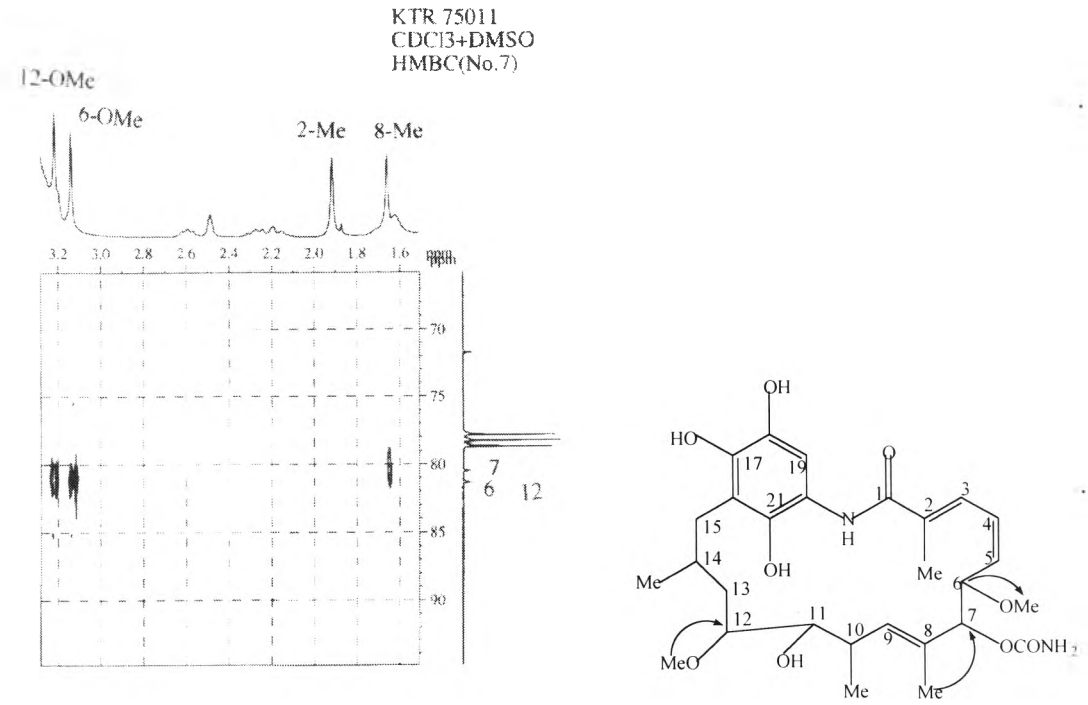


Figure 59 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethyldihydro-geldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 3.30-1.50 ppm).

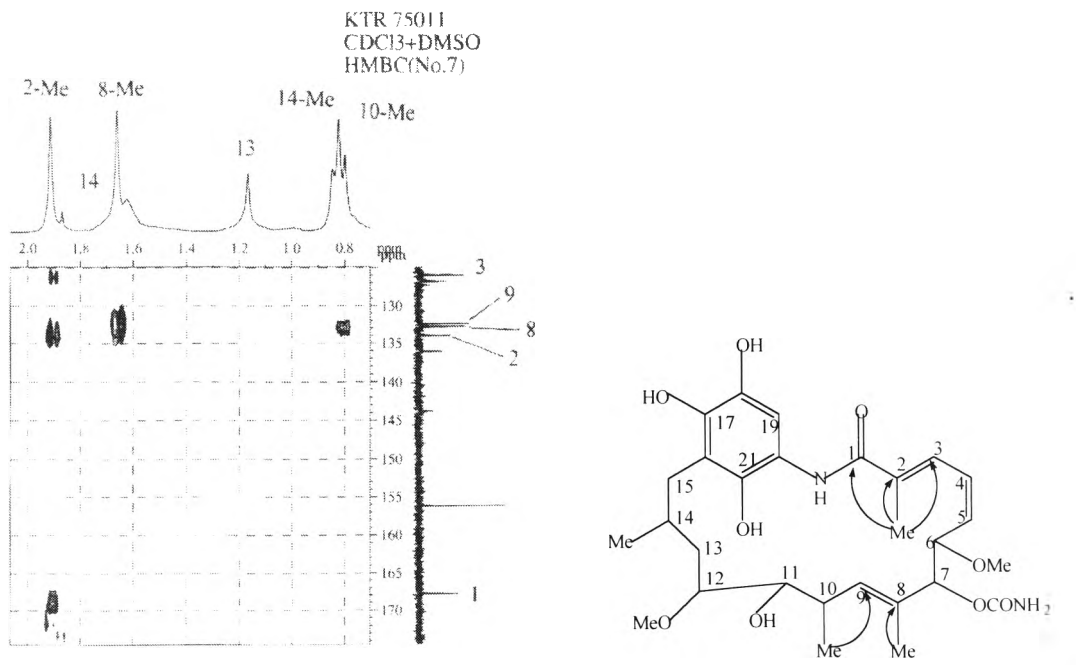
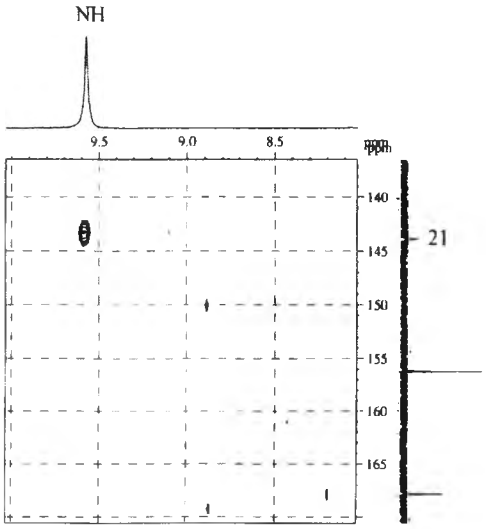
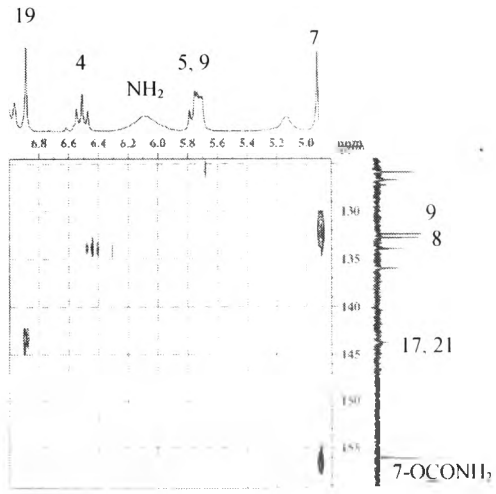


Figure 60 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 8 Hz) of 17-*O*-demethyldihydro-geldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 2.00-0.70 ppm).



(**a** expanded from δ_H 10.00-8.50 ppm).



(**b** expanded from δ_H 7.00-4.80 ppm).

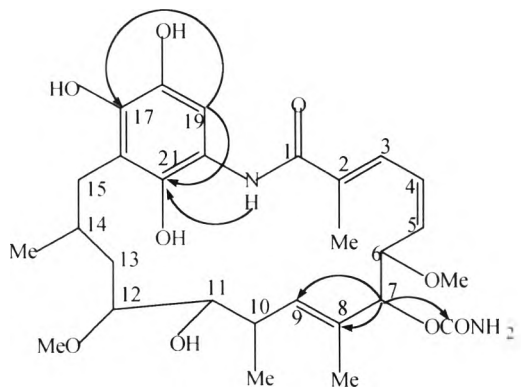


Figure 61 The 300 MHz HMBC spectrum ($^nJ_{HC}$ = 8 Hz) of 17-*O*-demethyldihydro-geldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6.

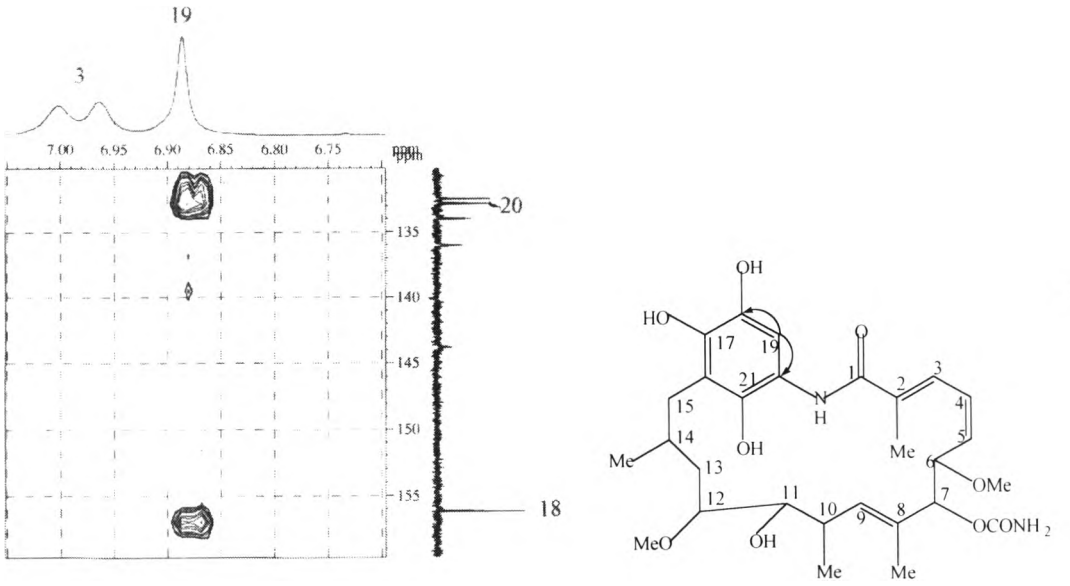


Figure 62 The 300 MHz HMBC spectrum ($^{n}J_{HC}$ = 4 Hz) of 17-*O*-demethyldihydrogeldanamycin (KTR75010) in $CDCl_3$+DMSO-d_6 (expanded from δ_H 7.20-4.70 ppm).

MEDIA USED FOR ACTINOMYCETE

1. Carbon utilization medium (ISP-9)

Carbon source

Pridham and Gottlieb trace salt

$CuSO_4 . 5H_2O$	0.64	g
$FeSO_4 . 7H_2O$	0.11	g
$MnCl_2 . 4H_2O$	0.79	g
$ZnSO_4 . 7H_2O$	0.15	g
Distilled water	1,000	ml

Basal mineral salt agar

$(NH_4)_2SO_4$	2.64	g
KH_2PO_4 (anhydrous)	2.38	g
$K_2HPO_4 . 3H_2O$	5.65	g
$MgSO_4 . 7H_2O$	1.00	g
Pridham and Gottlieb trace salt	1.0	ml
Distilled water	1,000	ml
Agar	15-20	g

2. Cellulose decomposition medium

Czapek's solution (free from sucrose) and paper strip

3. Glucose beef extract peptone medium

Glucose	15	g
Beef extract	3	g
Peptone	6	g

Yeast extract	3 g
Sea water (35 ppt)	1,000 ml
$MgSO_4 . 7H_2O$	2.5 g
pH 7.0 – 7.4	

4. Glycerol asparagines agar (ISP-5)

L- asparagines (anhydrous)	1.0 g
K_2HPO_4	1.0 g
Glycerol	10.0 g
Distilled water	1,000 ml
Trace salt solution	1 ml
Agar	15-20 g
pH 7.0 – 7.4	

5. Glycerol peptone medium (GPM)

Glycerol	20.0 g
Molasses	10.0 g
Beef extract	5.0 g
Peptone	5.0 g
$CaCO_3$	4.0 g
Sea water (35 ppt)	1,000 ml
pH 7.3	

6. Inorganic salt-starch agar

Difco soluble starch	10.0 g
K_2HPO_4 (anhydrous)	1.0 g
$MgSO_4 . 7H_2O$	1.0 g
NaCl	1.0 g
$(NH_4)_2SO_4$	2.0 g
$CaCO_3$	2.0 g
Distilled water	1,000 ml

Trace salt solution	1 ml
Agar	15-20 g
pH 7.0 – 7.4	

7. Nutrient gelatin broth

Peptone	10.0 g
Meat extract	5.0 g
NaCl	5.0 g
Gelatin	150.0 g
Distilled water	1,000 ml
pH 7.0 – 7.2	

8. Oatmeal agar medium

Oatmeal agar	18.0 g
Distilled water	1,000 ml
pH 7.2	

9. Peptone nitrate broth

Peptone	10.0 g
KNO_3	1.0 g
NaCl	5.0 g
Distilled water	1,000 ml
pH 7.0	

10. Potato carrot agar (PCA)

Potato	30.0 g
Carrot	25.0 g
Tap water	1,000 ml
Agar	15-20 g
pH 7.0	

11. Sabouraud's dextrose agar (SDA, Difco®)

Neopeptone	10.0	g
Dextrose	40.0	g
Agar	15.0	g
Distilled water	1,000	ml
pH 5.60 ± 0.2		

12. Skim milk

Bacto skim milk dehydrated (Difco®)	100	g
Distilled water	1,000	ml

13. Sodium casienate agar (SCA)

Sodium casienate	20.0	g
Glucose	10.0	g
K_2HPO_4 (anhydrous)	0.2	g
$MgSO_4 . 7H_2O$	0.2	g
$FeSO_4 . 7H_2O$	trace	
distilled water	1,000	ml
Agar	15-20	g
pH 7.0		

14. Tryptic soy agar (TSA, Difco®)

Tryptone peptone	15.0	g
(Pancreatic digest of casein)		
Soytone peptone	5.0	g
(Papic digest of soybean meal)		
NaCl	5.0	g
Agar	15.0	g

Distilled water	1,000 ml
pH 7.3 ± 0.2	

15. Tyrosinase reaction agar

Peptone	5.0 g
Meat extract	3.0 g
L- tyrosine	5.0 g
Distilled water	1,000 ml
Agar	15-20 g

16. Tyrosine agar

Glycerol	15.0 g
L- tyrosine	0.5 g
L- asparagines	1.0 g
K_2HPO_4 (anhydrous)	0.5 g
$MgSO_4 . 7H_2O$	0.5 g
NaCl	0.5 g
$FeSO_4 . 7H_2O$	0.01 g
Distilled water	1,000 ml
Trace salt solution	1 ml
pH 7.2 – 7.4	15-20 g

17. Yeast extract-malt extract agar (YMA)

Glucose	4.0 g
Yeast extract	4.0 g
Malt extract	10.0 g
Sea water (35 ppt)	1,000 ml
Agar	15-20 g
pH 7.3	

No Agar added for Yeast extract-malt extract broth (YM).

VITA

Miss Sarin Tadtong was born on May 12, 1978 in Bangkok, Thailand. She received her Bachelor Degree of Science in Pharmacy in 1999 from the Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. She received the University Development Commission (UDC) scholarship in 1999. Now she is a staff of the Faculty of Pharmacy, Srinakharinwirot University, Ongkharak Campus.