APPENDIX

Reagent preparation for phytochemicals screening

1. Dragendorff's reagent

Preparation of bismuth nitrate solution, 8.0 g bismuth nitrate in 12.0 mL 30% nitric acid. Dissolve 27.2 g potassium iodide in 50 mL water and put in to the bismuth nitrate solution then diluted to 100 mL with water.

2. Kraut's spray reagent

Dissolve 8.0 g bismuth nitrate in 20 mL nitric acid and 27.2 g potassium iodide in water 50 mL. mix the two solutions and allow precipitation, then take the clear solution and adjust to 100 mL with water.

3. Mayer's reagent

Two solutions; 1.36 g mercuric chloride in 60 mL water and 5.0 g potassium iodide in 10 mL water are mixed and make the volume diluted to 100 mL with water.

4. Valser's reagent

Gently dissolve 2.0 g mercuric iodide in potassium iodide solution (10.0 g KI in 80 mL water) and adjust volume to 100 mL with water.

5. Wagner's reagent

Dissolve 2.0 g potassium iodide in water, add 1.27 g crystals of iodine then shake and adjust volume to100 mL with water.

Preparation of spray reagents

1. Anisaldehyde in sulfuric acid

Add 1 mL conc. Sulfuric acid to the mixture of 0.5 mL anisaldehyde in 50 mL glacial acetic acid. Fleshly prepare before using.

2. Dragendorff's spray reagent

Solution A: add 10 mL water into the solution of 0.6 g bismuth subnitrate in 2 mL conc. hydrochloric acid.

Solution B: dissolve 6.0 g potassium iodide in 10 mL water and shake.

Mix the solution A and B then add 7 mL conc. Hydrochloric acid and 15 mL water. Adjust the volume to 400 mL with water.

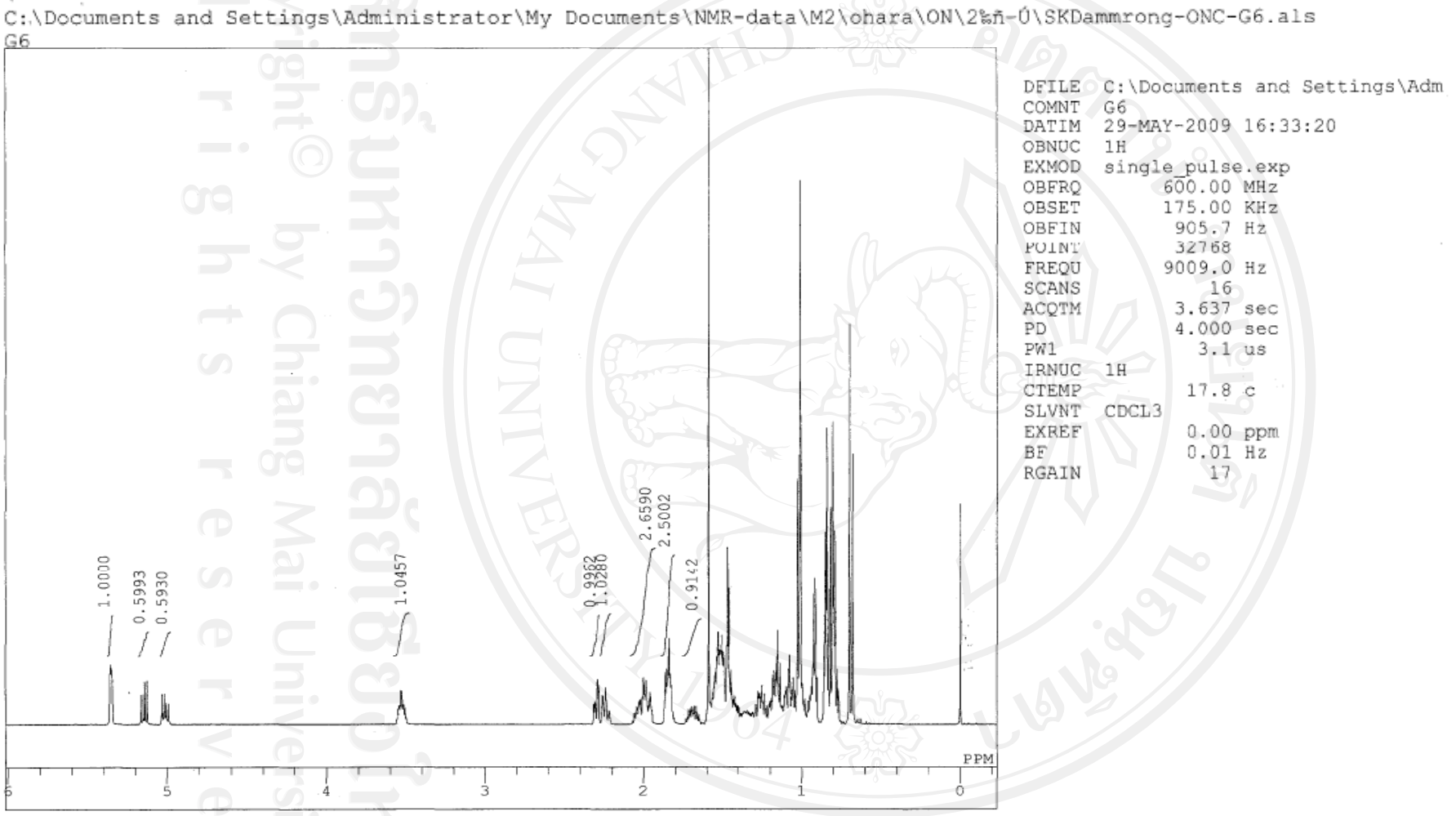

Figure 19 The 600 MHz ^{1}H-NMR spectrum of compound G6P

Figure 20 The 150 MHz ^{13}C-NMR spectrum of compound G6P

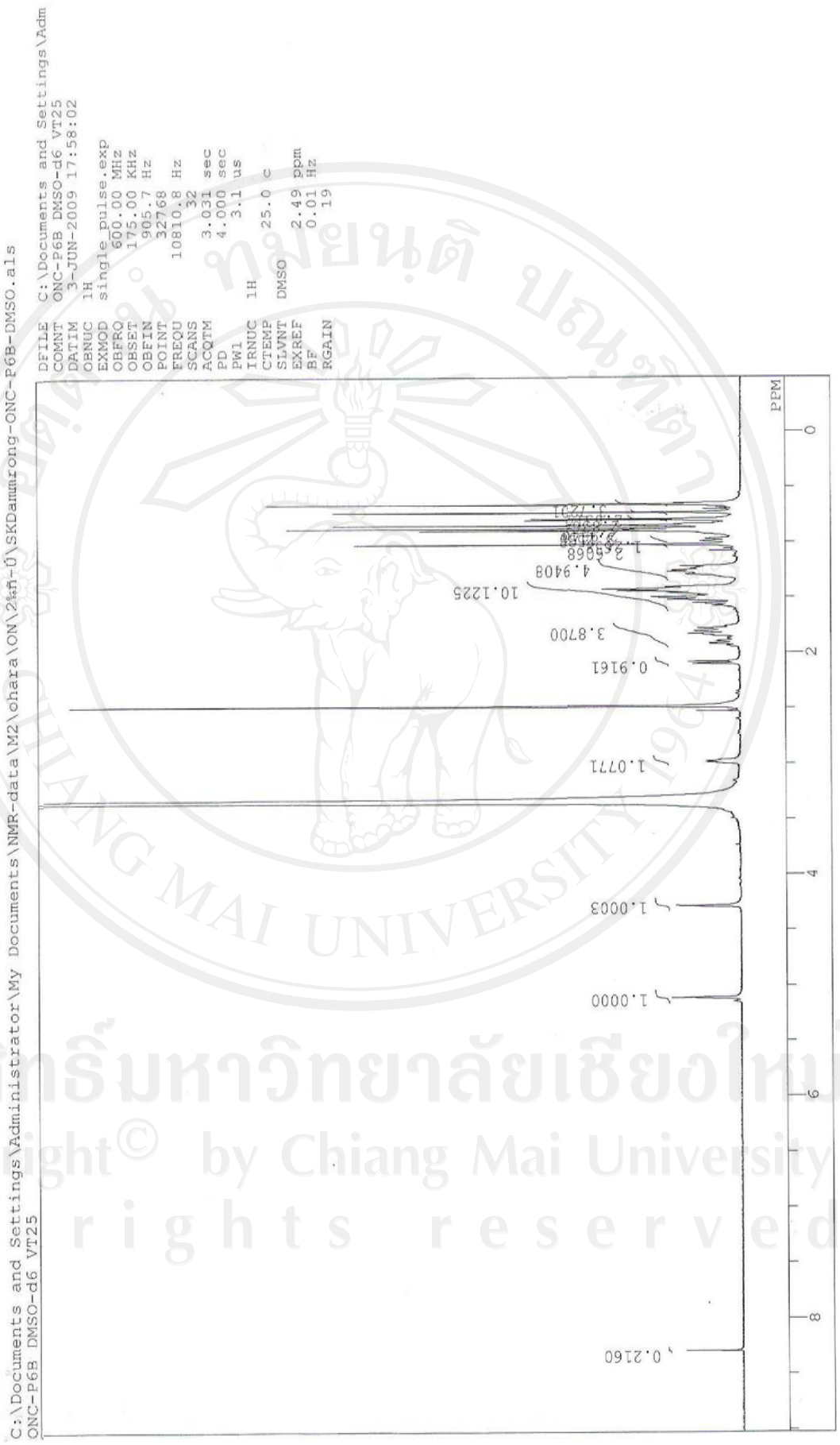

Figure 21 The 600 MHz ^{1}H-NMR spectrum of compound P6bP

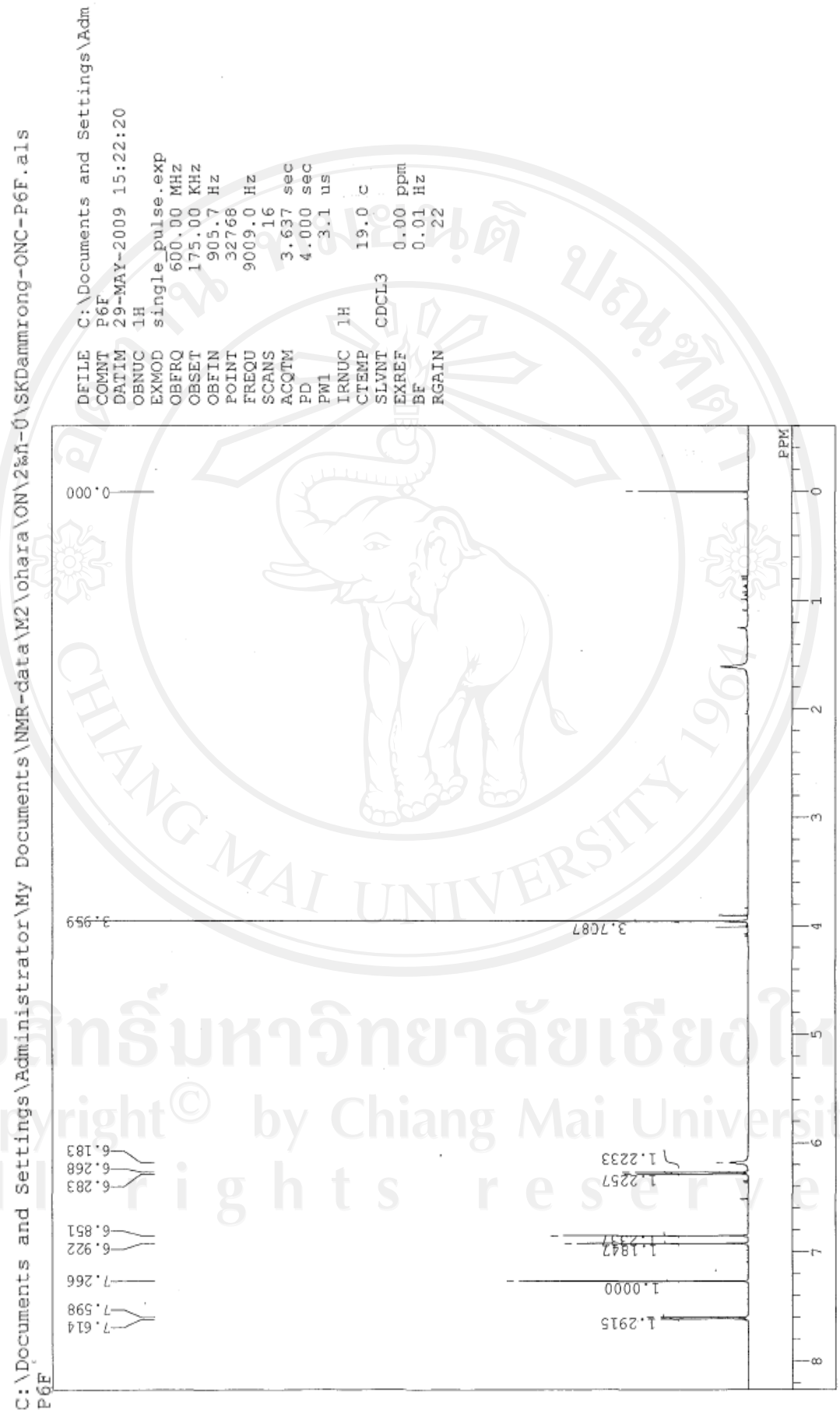

Figure 22 The 600 MHz ^{1}H-NMR spectrum of compound P6fP

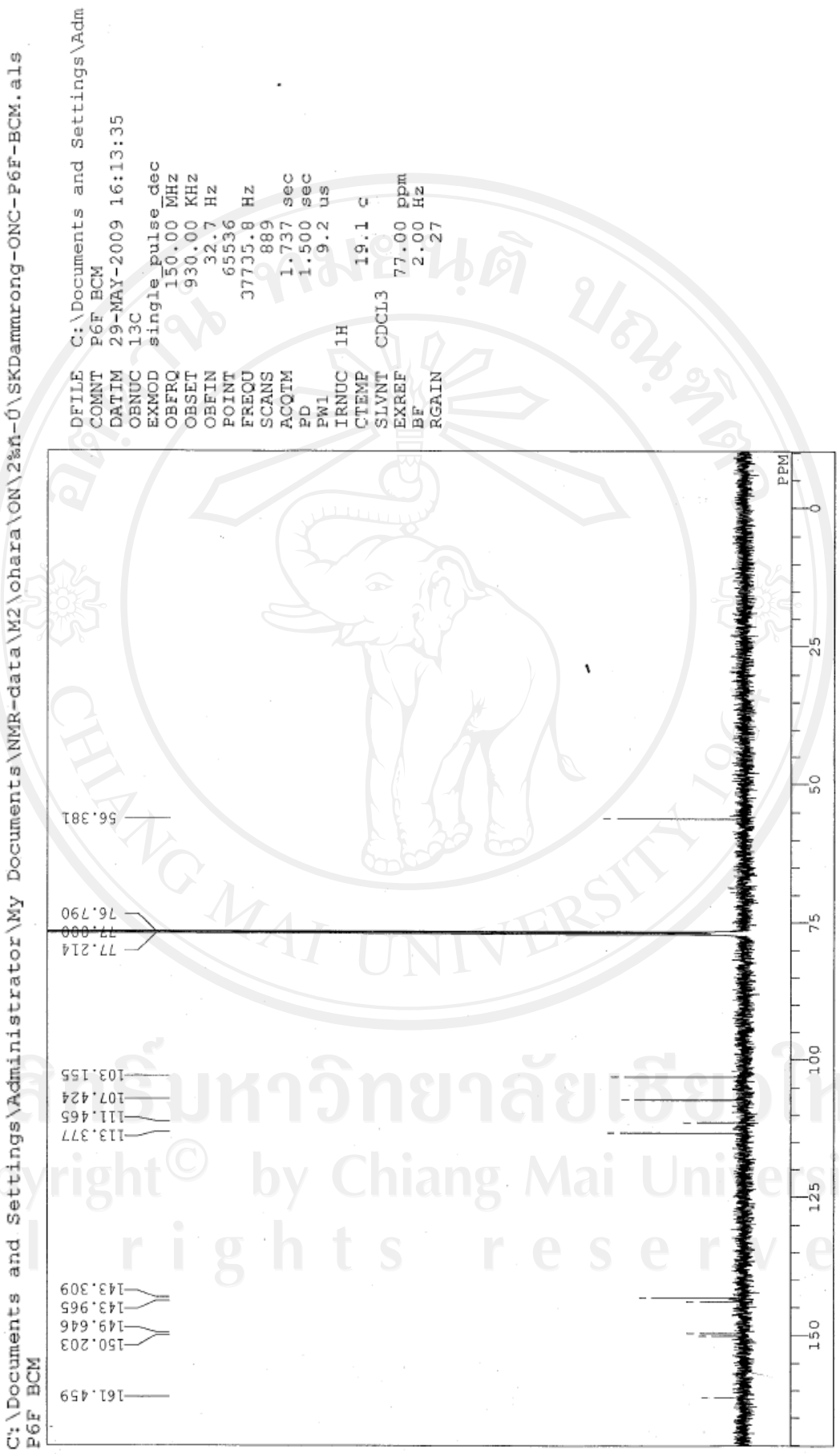

Figure 23 The 150 MHz ^{13}C-NMR spectrum of compound P6fP

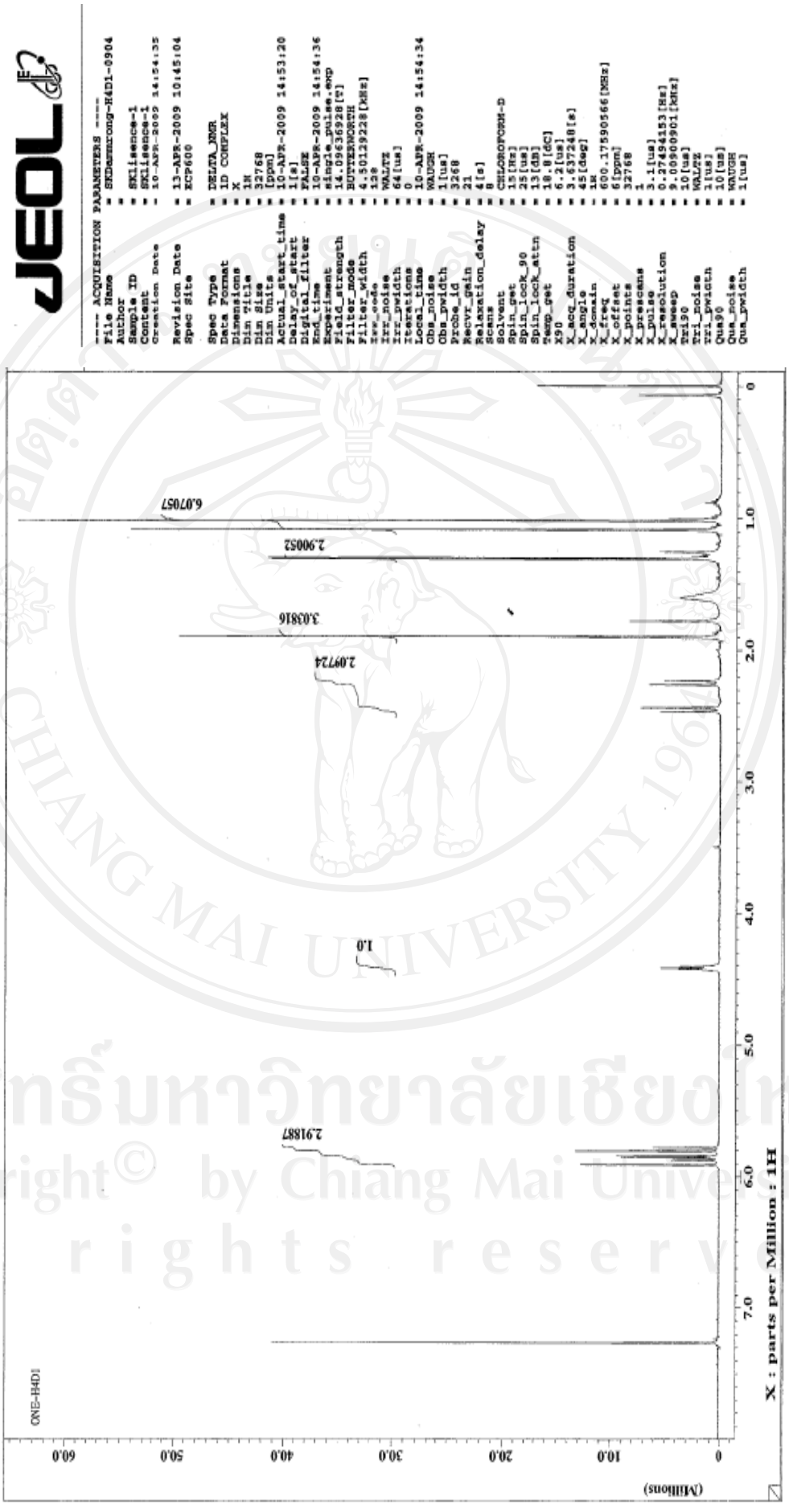

Figure 24 The 600 MHz ^{1}H-NMR spectrum of compound H4d1P

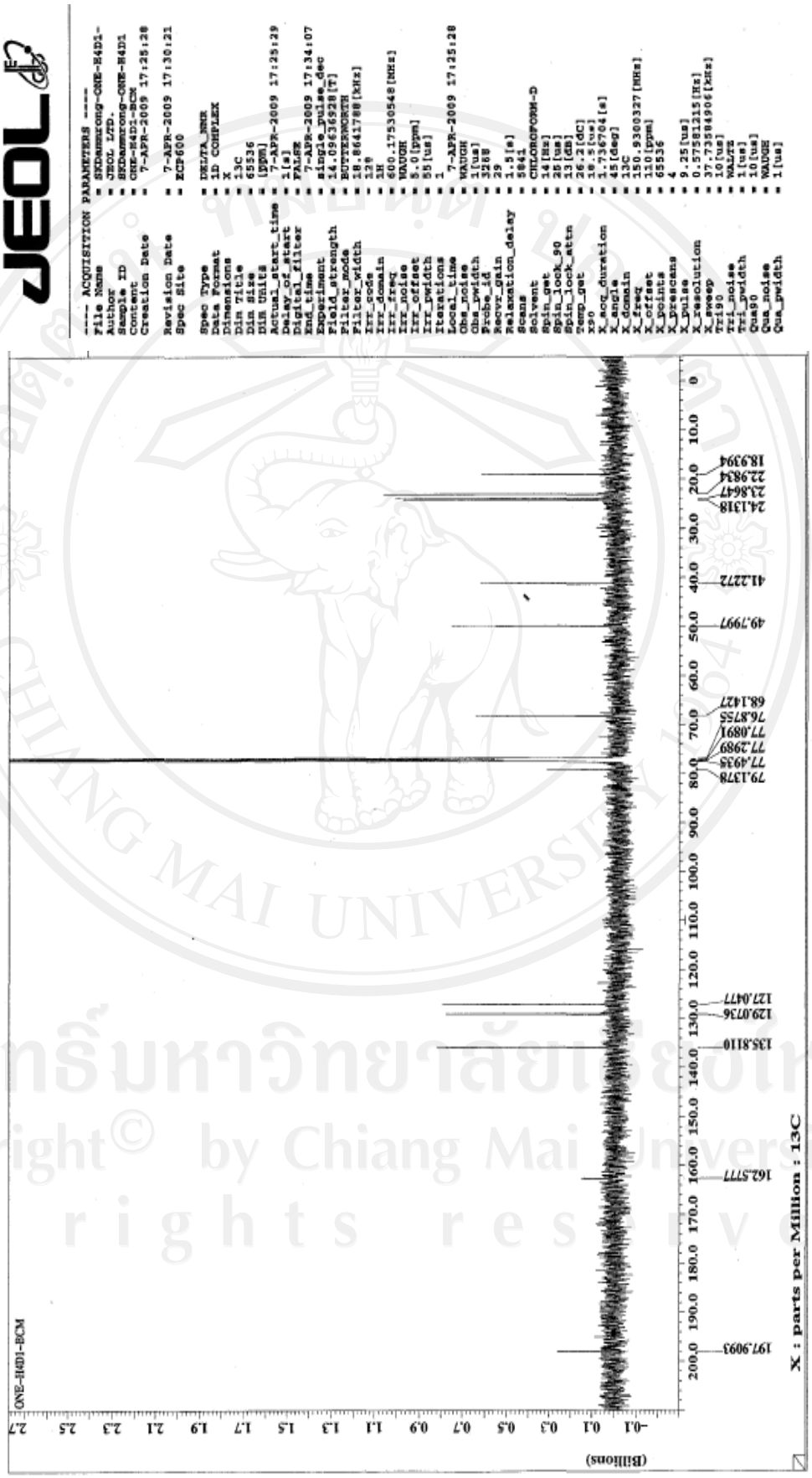

Figure 25 The 150 MHz ^{13}C-NMR spectrum of compound H4d1P

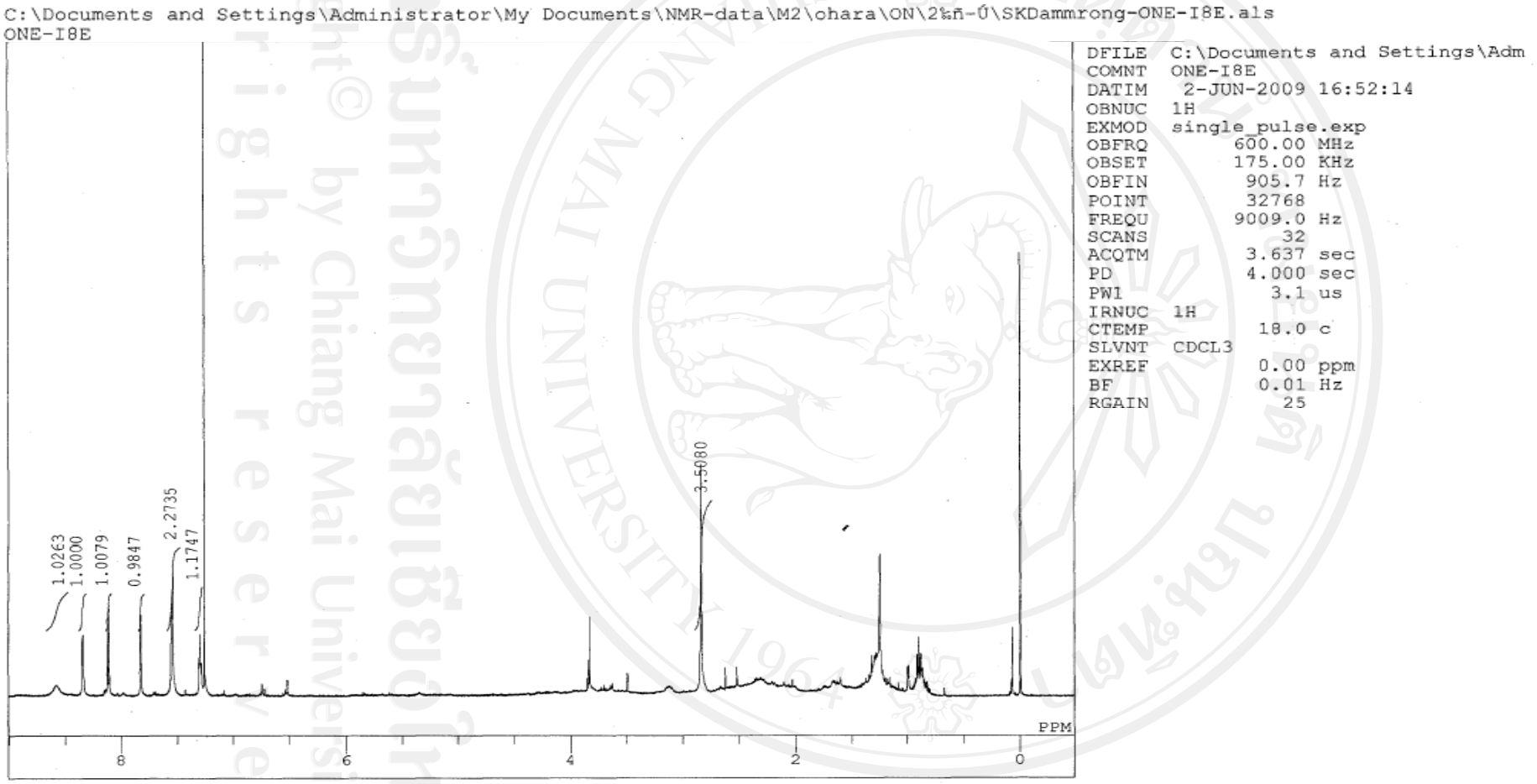

Figure 26 The 600 MHz ^{1}H-NMR spectrum of compound I8eP

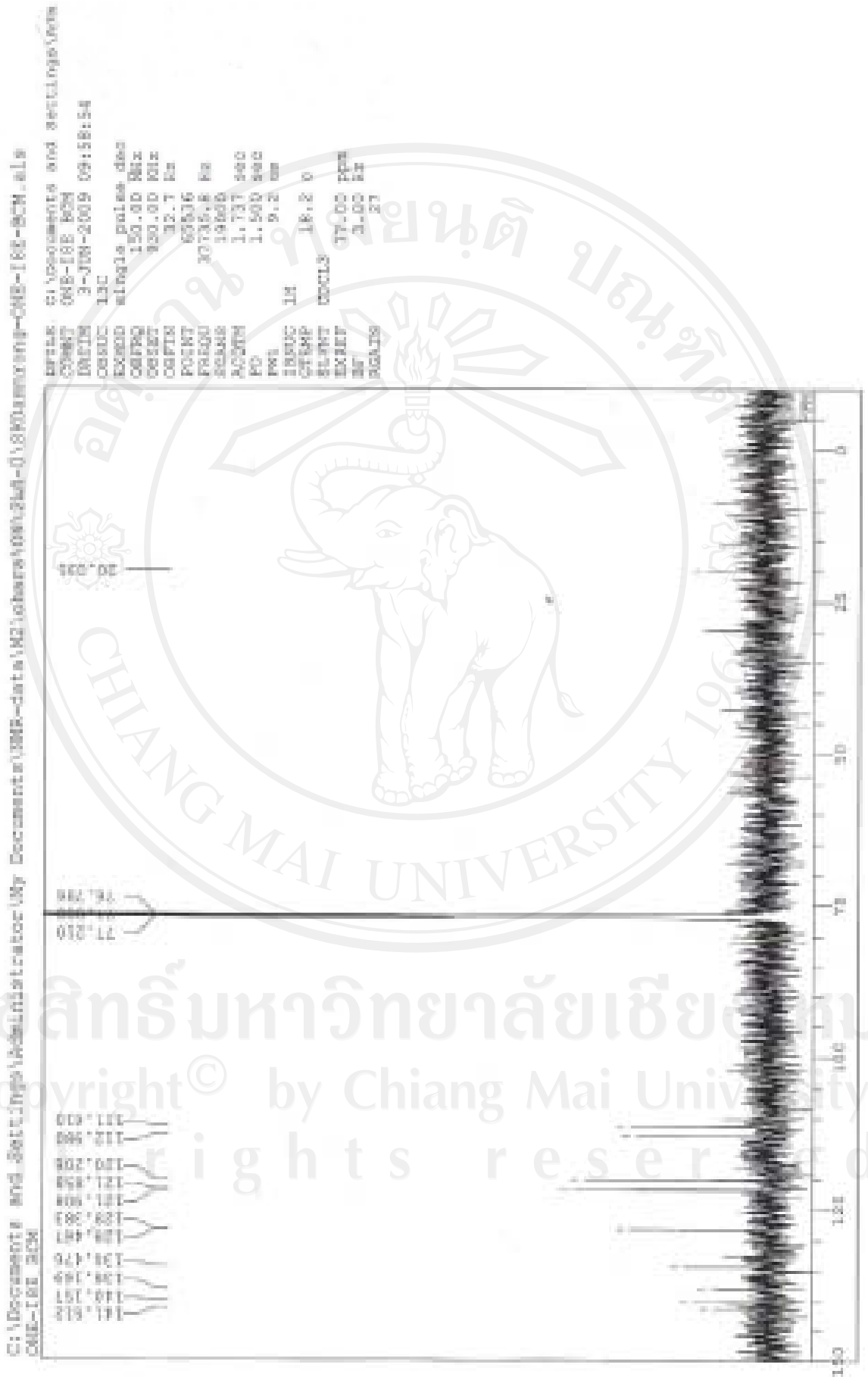

Figure 26 The 150 MHz ^{13}C-NMR spectrum of compound I8eP

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