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APPENDICES

APPENDIX A

A. Stock Solution Preparation

Phosphate buffer

Preparation of phosphate buffer stock solution 500 mM 1000 mL with K_2HPO_4 (MW 174.18, 42.5521 g) and KH_2PO_4 (MW 136.09, 34.7928 g) in deionizers water. K_2HPO_4 and KH_2PO_4 were dissolved in 900 mL deionizers water and measured pH with pH meter (pH 211 microprocessor pH meter, HANNA Instrument) then adjust pH to 6.8 with 0.1 M HCl and 0.1 M NaOH next adjust volumn to 1000 mL.

$$\text{pH} = \text{pKa} + \log \frac{[HPO_4^{2-}]}{[H_2PO_4^-]}$$

$$6.8 = 6.82 + \log \frac{[HPO_4^{2-}]}{[H_2PO_4^-]}$$

$$0.2 = \log \frac{[H_2PO_4^-]}{[HPO_4^{2-}]}$$

$$\frac{1.0471}{1} = \log \frac{[H_2PO_4^-]}{[HPO_4^{2-}]}$$

$[H_2PO_4^-]$ = [CA]

[CA] = (1.0471/2.0471)x 0.5

[CA] = 0.2557

KH_2HPO_4 was used 0.2557 moles, 34.7982 g

$[HPO_4^{2-}]$ = [CB]

[CB] = (1/2.0471) x 0.5

[CB] = 0.2443

K_2HPO_4 was used 0.2443 moles, 42.5521 g

APPENDIX B

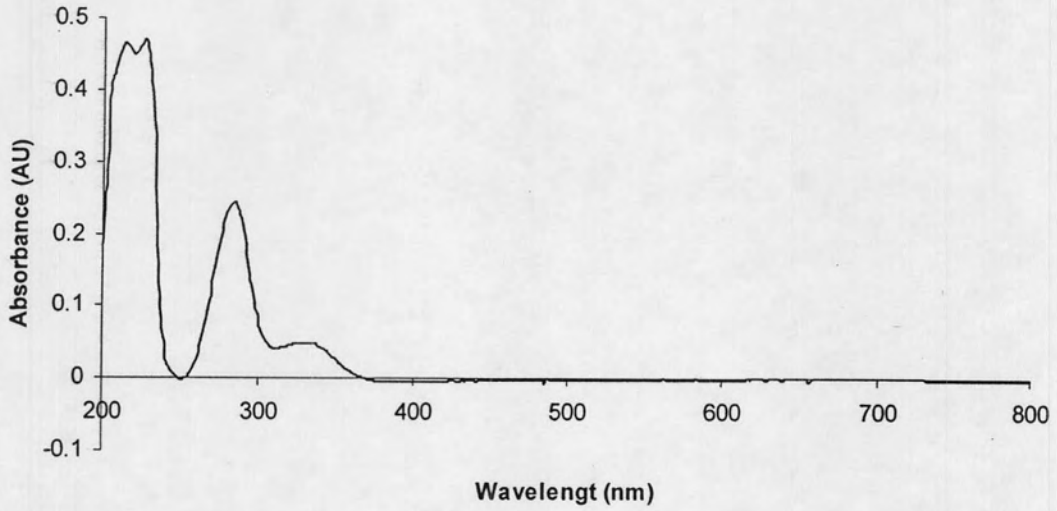

Figure B-1 UV Spectrum of naringin from KT albedo peels

APPENDIX C

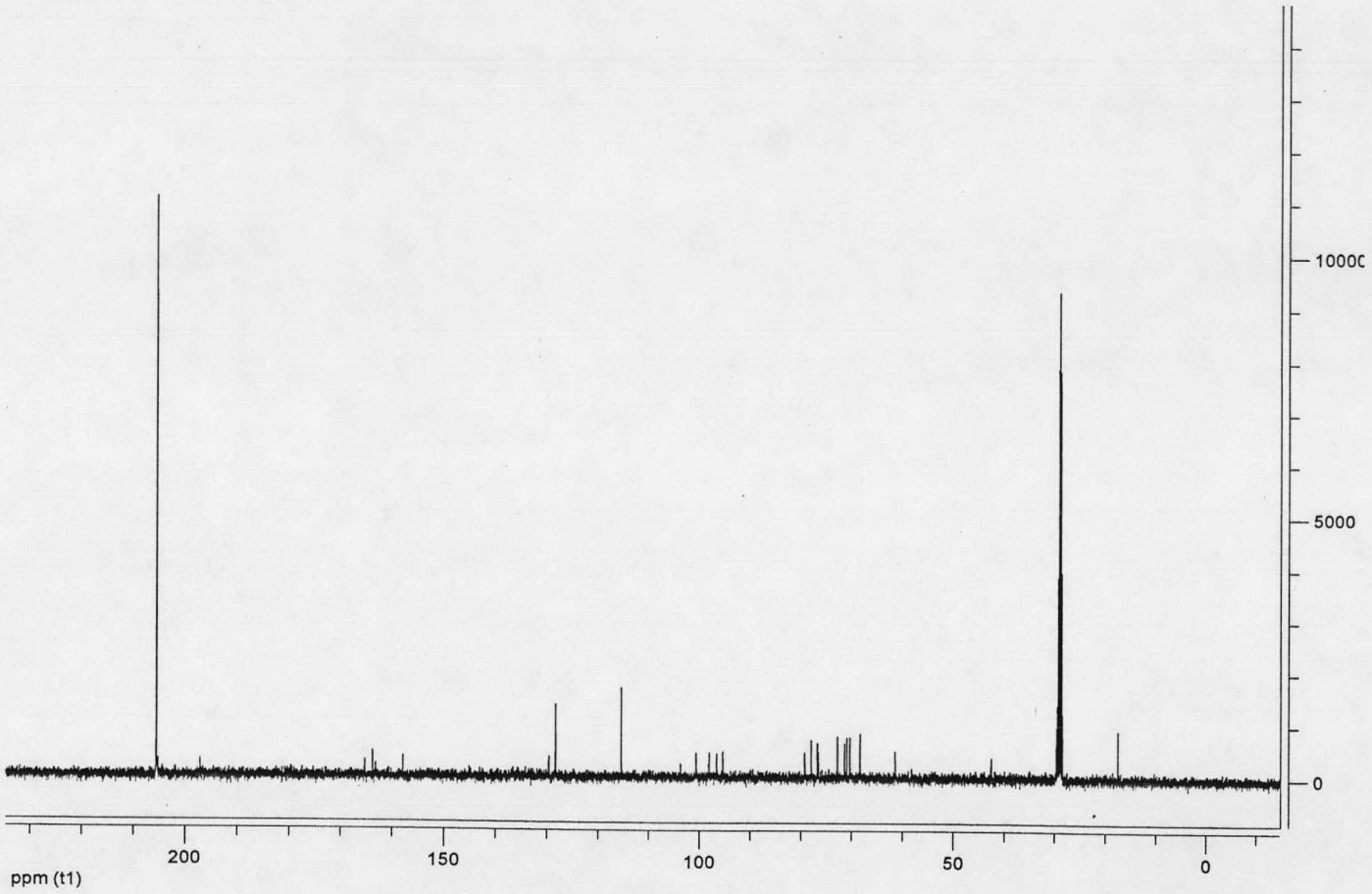

Figure C-1 The ^{13}C NMR spectrum (Acetone-d_6) of naringin

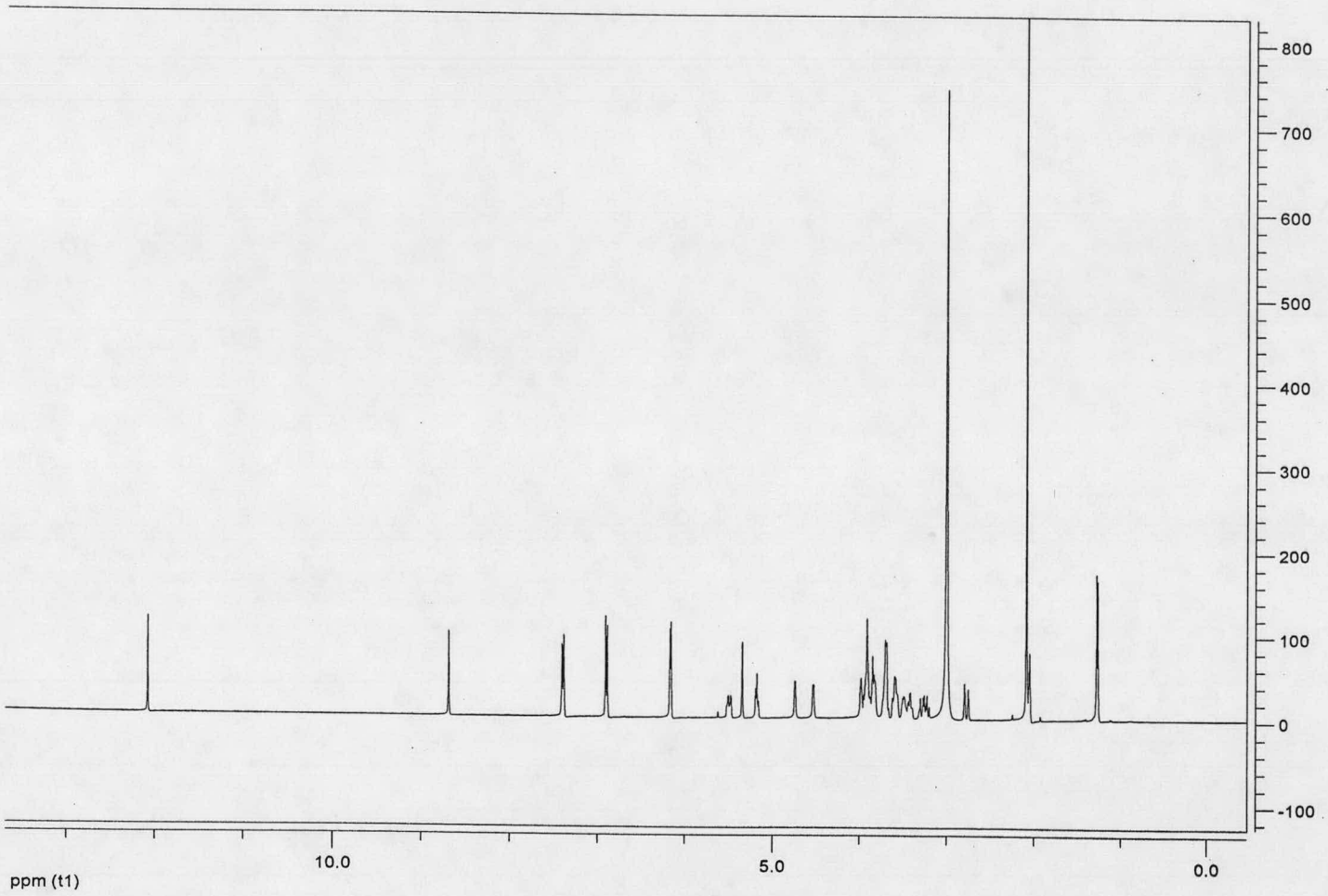

Figure C-2 The ^{1}H NMR spectrum (Acetone-d_6) of naringin

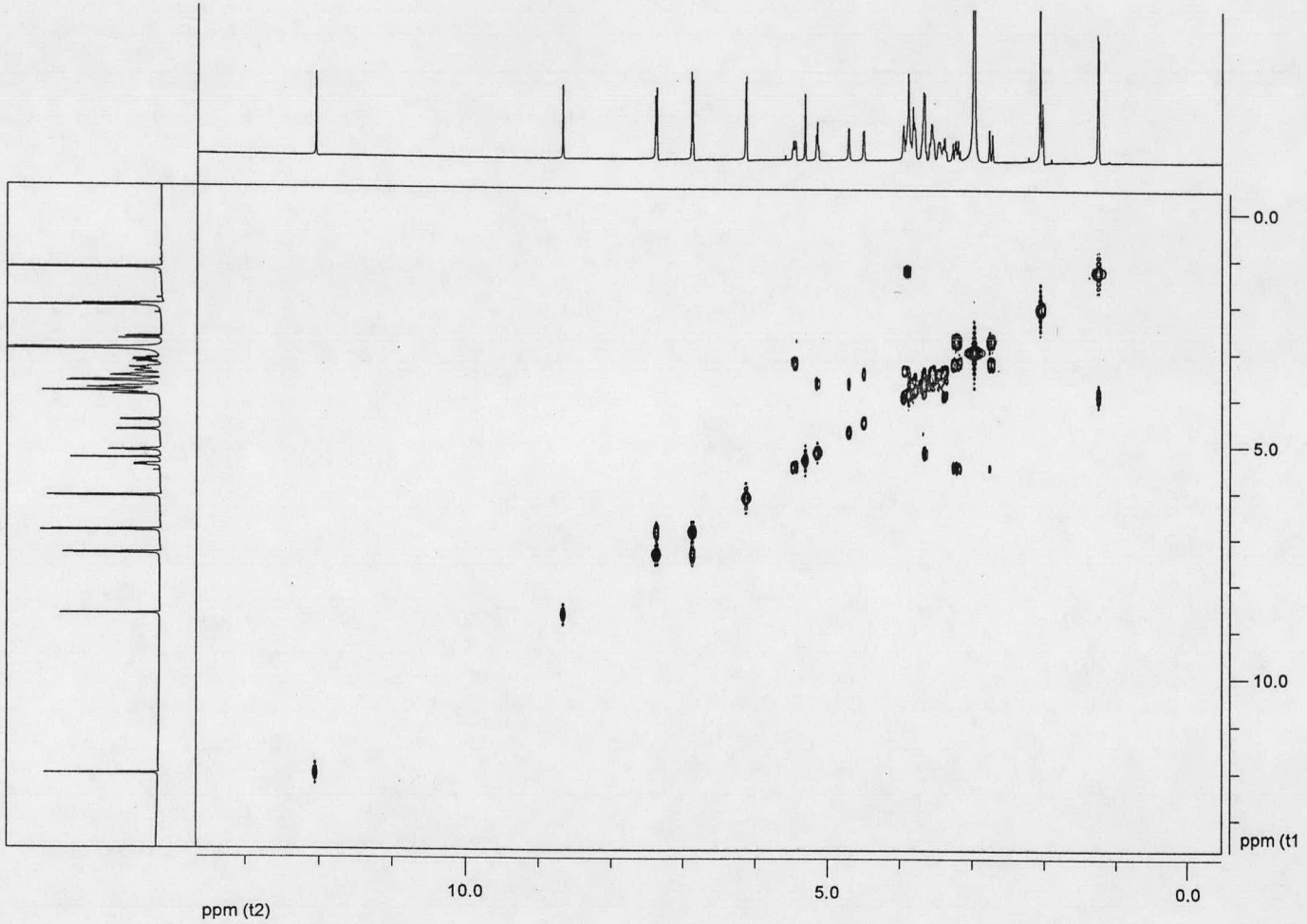

Figure C-3 The COSY spectrum (Acetone-d_6) of naringin

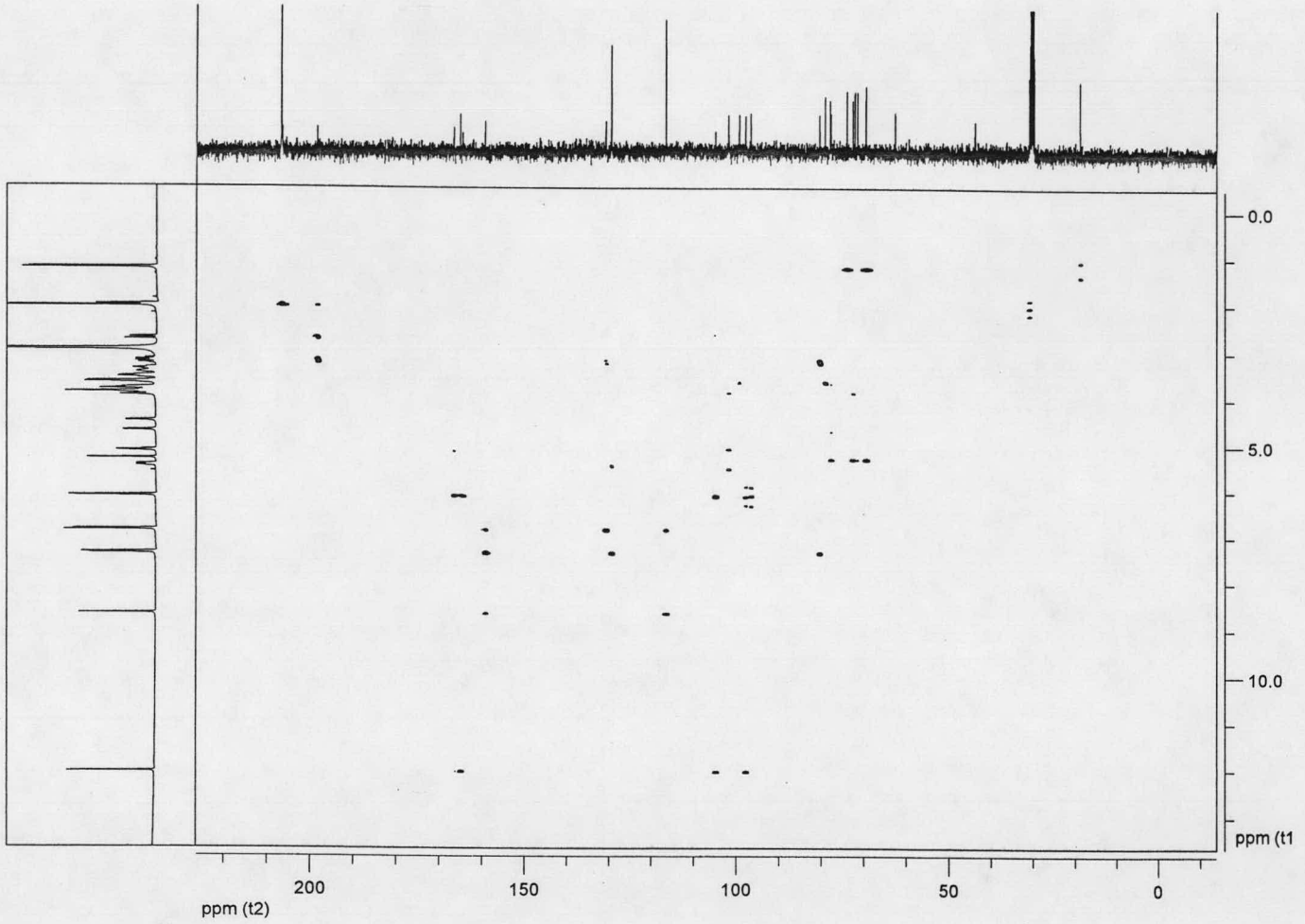

Figure C-4 HMBC spectrum (Acetone-d_6) of naringin

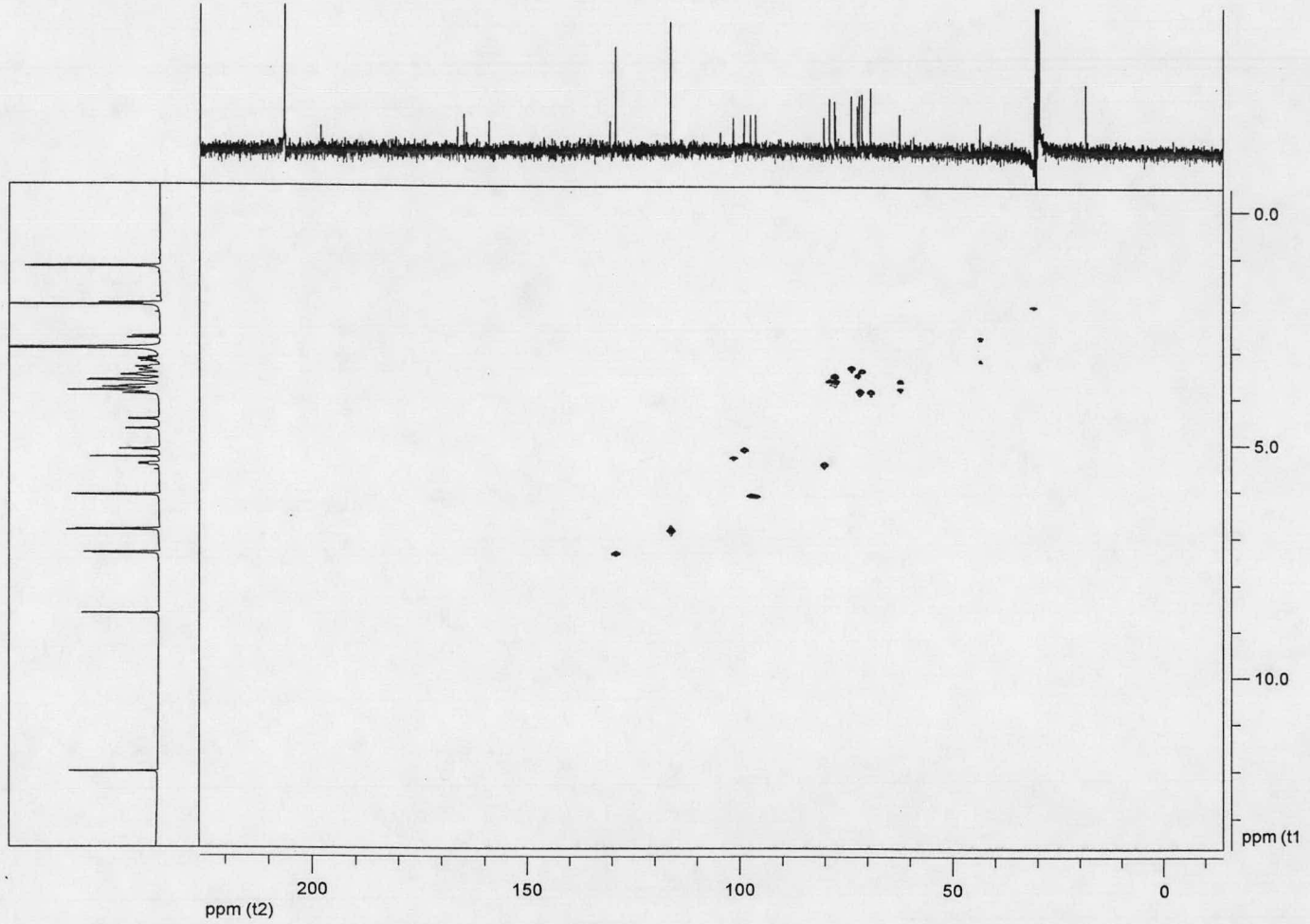

Figure C-5 HSQC spectrum (Acetone-d_6) of naringin

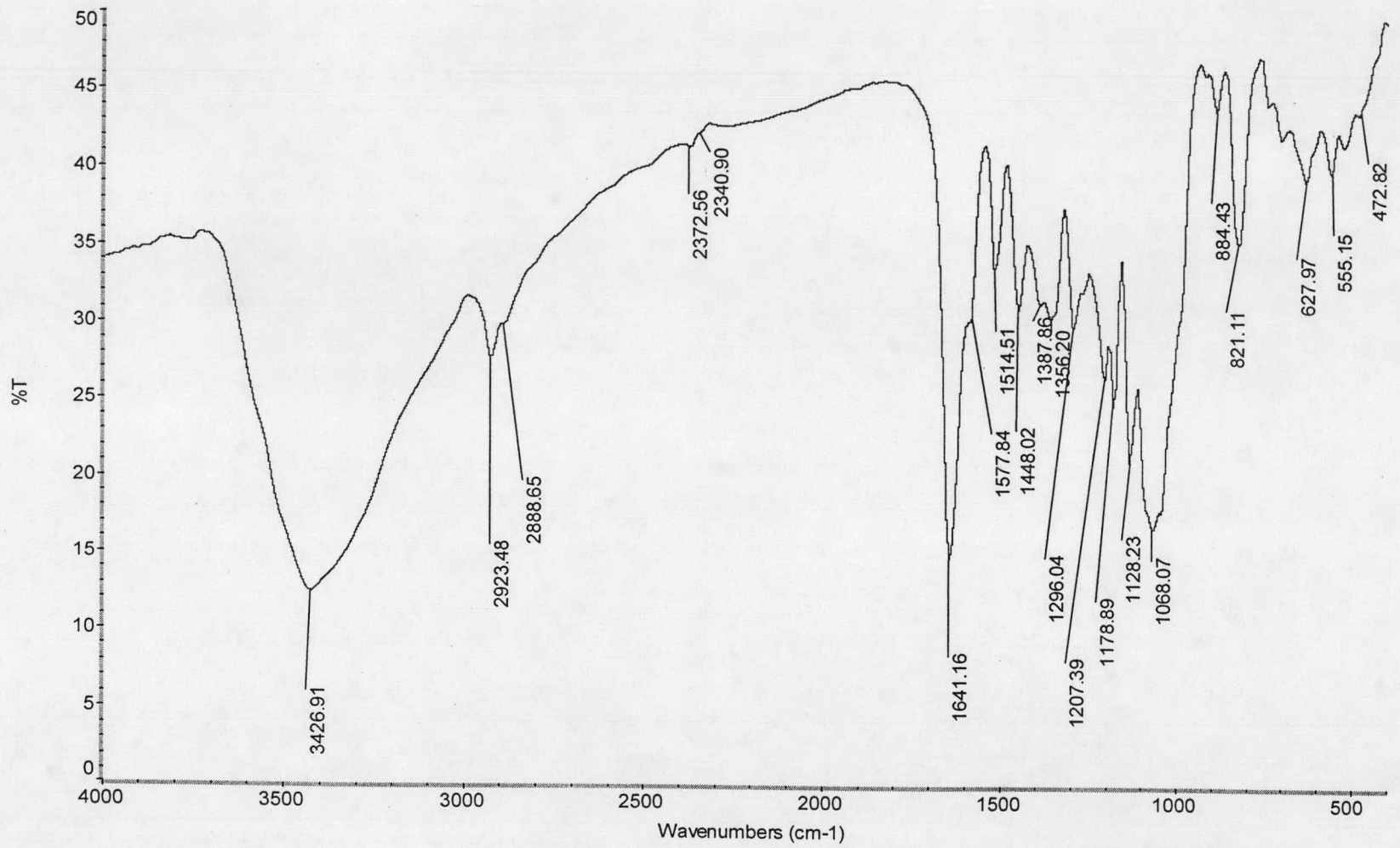

Figure C-6 The IR spectrum of naringin

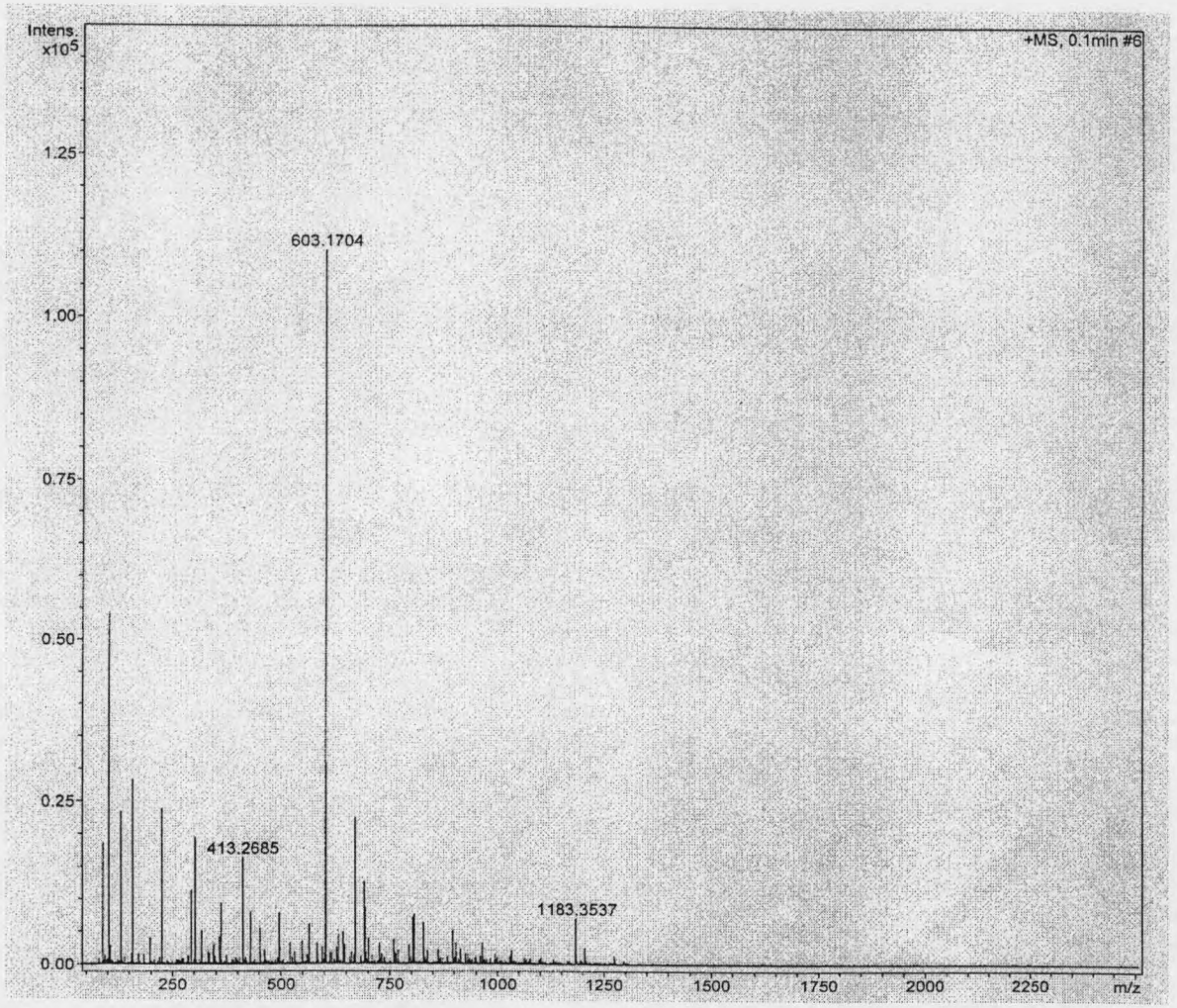

Figure C-7 The MS spectrum of naringin

VITA

Miss Kanokorn Sudto was born on 8th August, 1983 in Khon Kaen. She got a Bachelor of Science Degree in Biology from Kasetsart University in 2004. Afer that, Miss Kanokorn has been graduate student working for Master's Degree in Biotechnology program at Chulalongkorn University, During her Master of Science study, she was also awarded a research grant (Graduate School Thesis Grant) from Chulalongkorn University.

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