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Supporting Information (R.J. Booth and J.C. Hodges, Polymer-Supported Quenching Reagents for Parallel Purification)

1-(3-Isopropoxy-propyl)-3-(2-phenylethyl)-thiourea (9).

A solution of 3-isopropoxypropyl amine (**7**, 25 mg, 0.25 mmol) and 2-phenylethylisothiocyanate (44 µl, 0.3 mmol) in DCM (2 ml) was shaken for 1.5 hr and then polymer-supported tris(2-aminoethyl)amine (**1**, 50 mg) was added. After 2 hr the resin was filtered and washed with DCM (2 x 1.5 ml). The combined organic phases, when concentrated to dryness, gave the title compound (64 mg, 92%) as an oil. R_t = 6.92; IR (KBr) 1551; ^{1}H NMR ∂ 1.08 (6H, d, J = 6), 1.77 (2H, m), 2.89 (2H, t, J = 7), 3.5 (6H, m), 3.6 (1H, brs), 6.08 (1H, brs), 6.68 (1H, brs), 7.20 (3H, m), 7.28 (2H, m); ^{13}C NMR 22.1 (2C), 28.9, 35.11, 45.37, 67.0, 71.9, 77.0, 126.7, 128.7 (2C), 128.75 (2C), 138.2, 181.22; Predicted mass for $(C_{15}H_{24}N_2OS + H)^+$, 281.1688; Found by HRMS (CI), 281.1675.

1-(4-Methoxy-benzenesulfonyl)-4-pyridin-2-yl-piperazine (12).

A suspension of polymer-supported morpholine (**3**, 100mg), 1-(2-pyridyl)piperazine (**10**, 26 µl, 0.25 mmol) and 4-methoxybenzenesulphonyl chloride (**11**, 62 mg, 0.3 mmol) in DCM (2 ml) was shaken for 1 hr. Then polymer-supported tris(2-amnioethyl)amine (**1**, 200mg) was added. After 24 hr the resin was filtered and washed with DCM (2 x 1.5 ml). The combined organic phases, when concentrated to dryness, gave the title compound (54 mg, 65%) as a white solid. mp 148-152°C; R_t = 5.51; IR (KBr) 1345, 1160; ^{1}H NMR ∂ 3.05 (4H, t, J = 5), 3.59 (4H, t, J = 5), 3.82 (3H, s), 6.55 (1H, d, J = 9), 6.59 (1H, dd, J = 7, 5), 6.95 (2H, d, J = 7), 7.43 (1H, dd, J = 9, 7), 7.67 (2H, d, J = 7), 8.11 (1H, d, J = 5); ^{13}C NMR 44.8 (2C), 45.8 (2C), 55.65, 107.5, 113.95, 114.3 (2C), 126.88, 129 (2C), 138.1, 147.8, 158.2, 163.2; Predicted mass for

$(C_{16}H_{19}N_3O_3S + H)^+$, 334.1255; Found by HRMS (CI), 334.1220. Recrystallized mp 156-157°C (EtOAc/hexanes). Calc'd for $C_{16}H_{19}N_3O_3S$: C, 57.64; H, 5.74; N, 12.60. Found: C, 57.43; H, 5.82; N, 12.34.

R-N-(2-Hydroxy-1-phenyl-ethyl)-4-methyl-benzamide (15).

A suspension of polymer-supported morpholine (**3**, 85 mg), R-(-)-2-phenylglycinol (**14**, 41 mg, 0.3 mmol) and 4-methylbenzoyl chloride (**13**, 33 µl, 0.25 mmol) in DCM (2 ml) was shaken for 1 hr. Polymer-supported isocyanate (**2**, 150 mg) and polymer-supported tris(2-aminoethyl)amine (**1**, 50 mg) were added and the reaction mixture was shaken for 2 hr. The resin was filtered and washed with DCM (2 x 1.5 ml). The combined organic phases, when concentrated to dryness, gave the title compound (52 mg, 81%) as a white solid. mp 154-155°C; R_t = 5.65; IR (KBr) 1631; ^{1}H NMR ∂ 2.38 (3H, s), 3.00 (1H, brs), 3.96(2H, d, J = 5), 5.23 (1H, m), 6.9 (1H, d, J = 6), 7.0 (2H, d, J = 8), 7.2-7.4 (5H, m), 7.69 (2H, d, J = 8), ^{13}C NMR 21.5, 56.2, 66.6, 126.7, 127.1 (2C), 127.9 (2C), 128.9, 129.3 (2C), 131.2 (2C), 139.1, 142.3, 167.9; Predicted mass for $(C_{16}H_{17}NO_2 + H)^+$, 256.1338; Found by HRMS (CI), 256.1336. Recrystallized mp 157-158°C (EtOAc/hexanes). Cald'd for $C_{16}H_{17}NO_2.0.3H_2O$: C, 73.71; H, 6.80;, N, 5.37. Found: C, 73.80; H, 6.60; N, 5.32.

Amide Mixture Synthesis (24, 25 and 26).

A mixture of **20** (18.7 mg, 0.066 mmol), **21** (19.5 mg, 0.066 mmol) and **22** (19.7 mg, 0.066 mmol) was dissolved in DCM (2.2 mL). An aliquot of this solution (1.0 mL, 0.09 mmol) was transferred to a vial containing **3** (180 mg, 0.6 mmol) and a miniature magnetic spinbar. Isobutyl chloroformate (15 µL, 0.11 mmol) was added, the vial was capped and the reaction was stirred at

RT for 30 min. A solution of **23** (27 mg, 0.15 mmol) in DCM (1.0 mL) was added, and the reaction was stirred for 2.5 h. **1** (100 mg) and **2** (100 mg) were added and the resulting mixture was allowed to stand for 16 h at RT. Resin was collected by filtration and rinsed with DCM (5 mL). Combined filtrate and washings were evaporated and dried at 0.25 mmHg, RT for 24 h to afford a mixture of **24, 25** and **26** as a gum (46 mg, 112%). TLC (Si gel, $CHCl_3$-EtOAc, 10:1) shows 3 major spots under UV light, Rf = 0.9, 0.5 and 0.4 (staining gives no ninhydrin positive spots); ^{1}H NMR ∂ 4.93 (1H, t), 5.02 (1H, t), 5.19 (1H, t) indicating 3 equal amide NH, 0.89 (~2H, d) indicating contamination by the isobutyl carbamate of **23** (see accompanying spectrum); Predicted masses for $(C_{26}H_{26}N_3FOS + H)^+$, 448.1859, $(C_{24}H_{29}NO_2S_3 + H)^+$, 460.1439, and $(C_{29}H_{35}NO_2S + H)^+$, 462.2467; Found by HRMS (ES), 448.1868, 460.1445, and 462.2486. See also the HPLC chromatogram in text.

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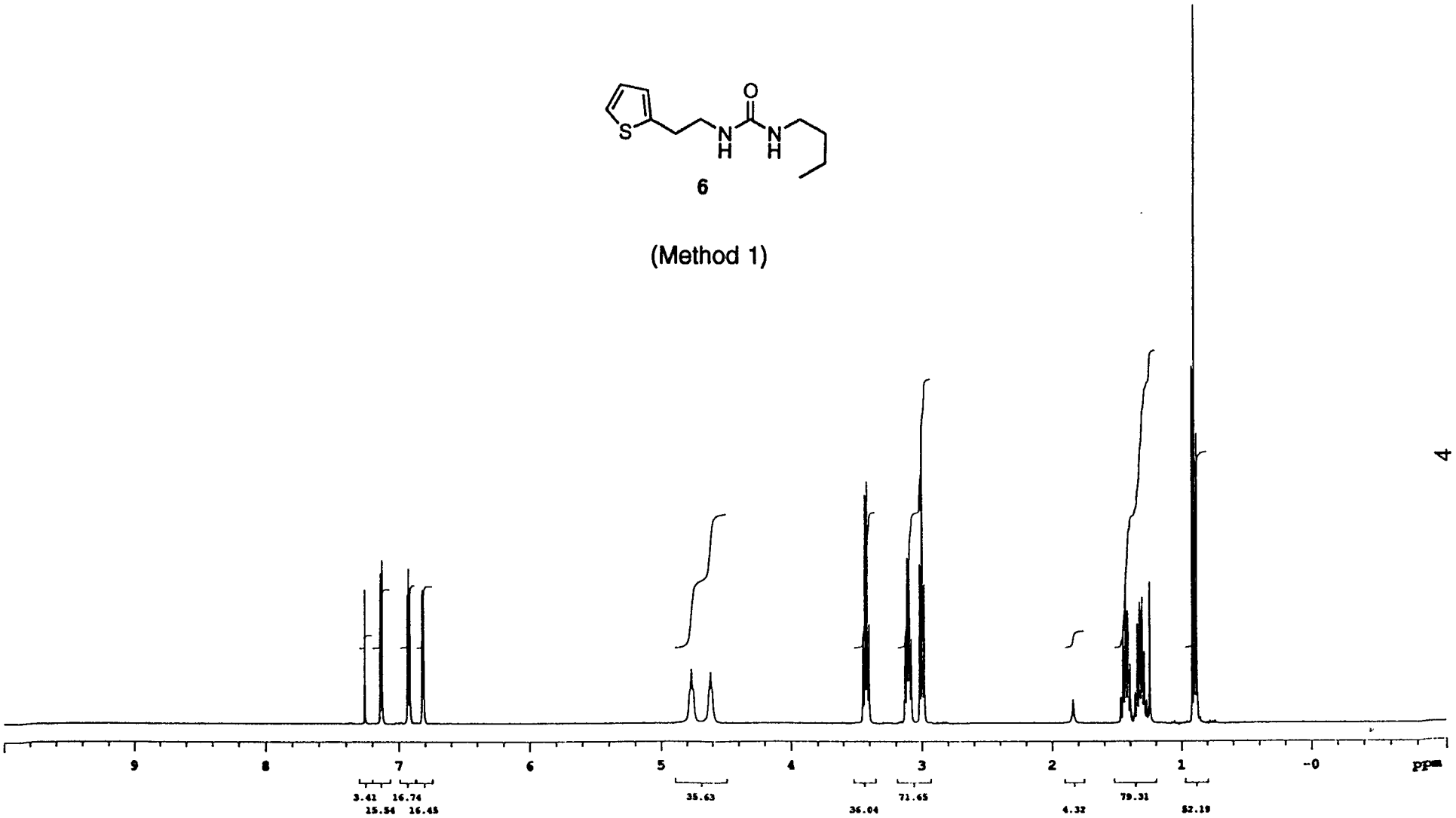

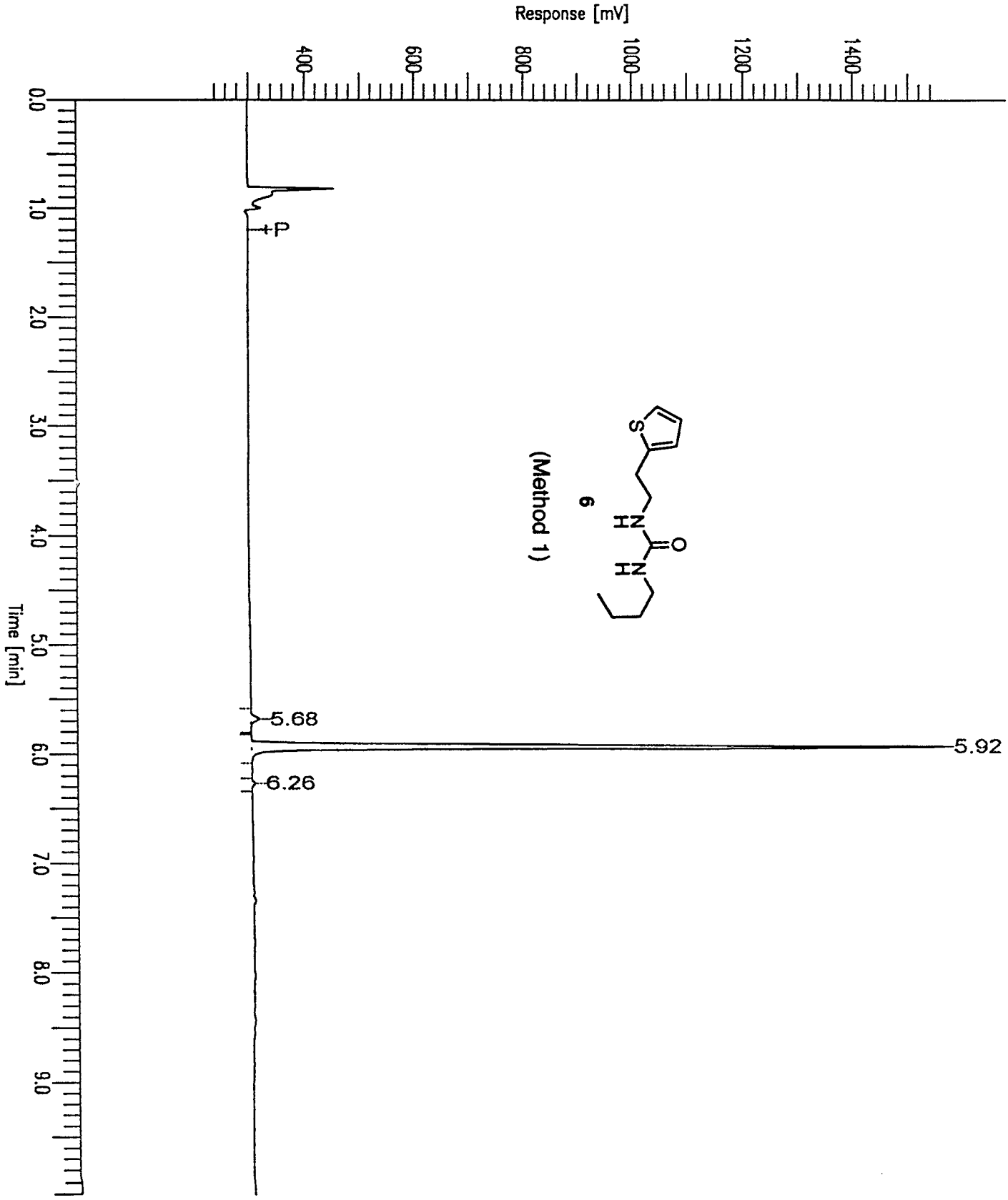
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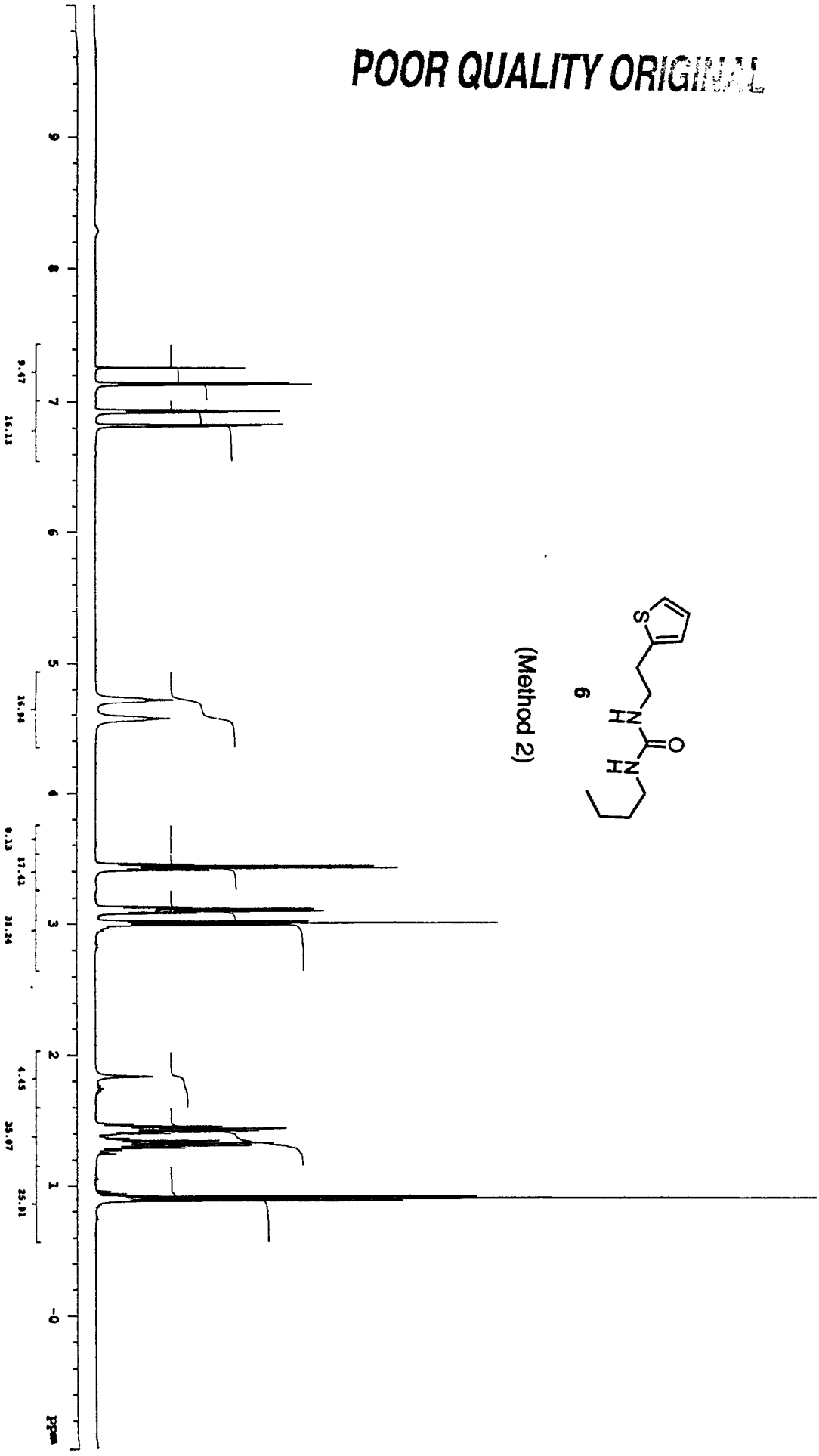

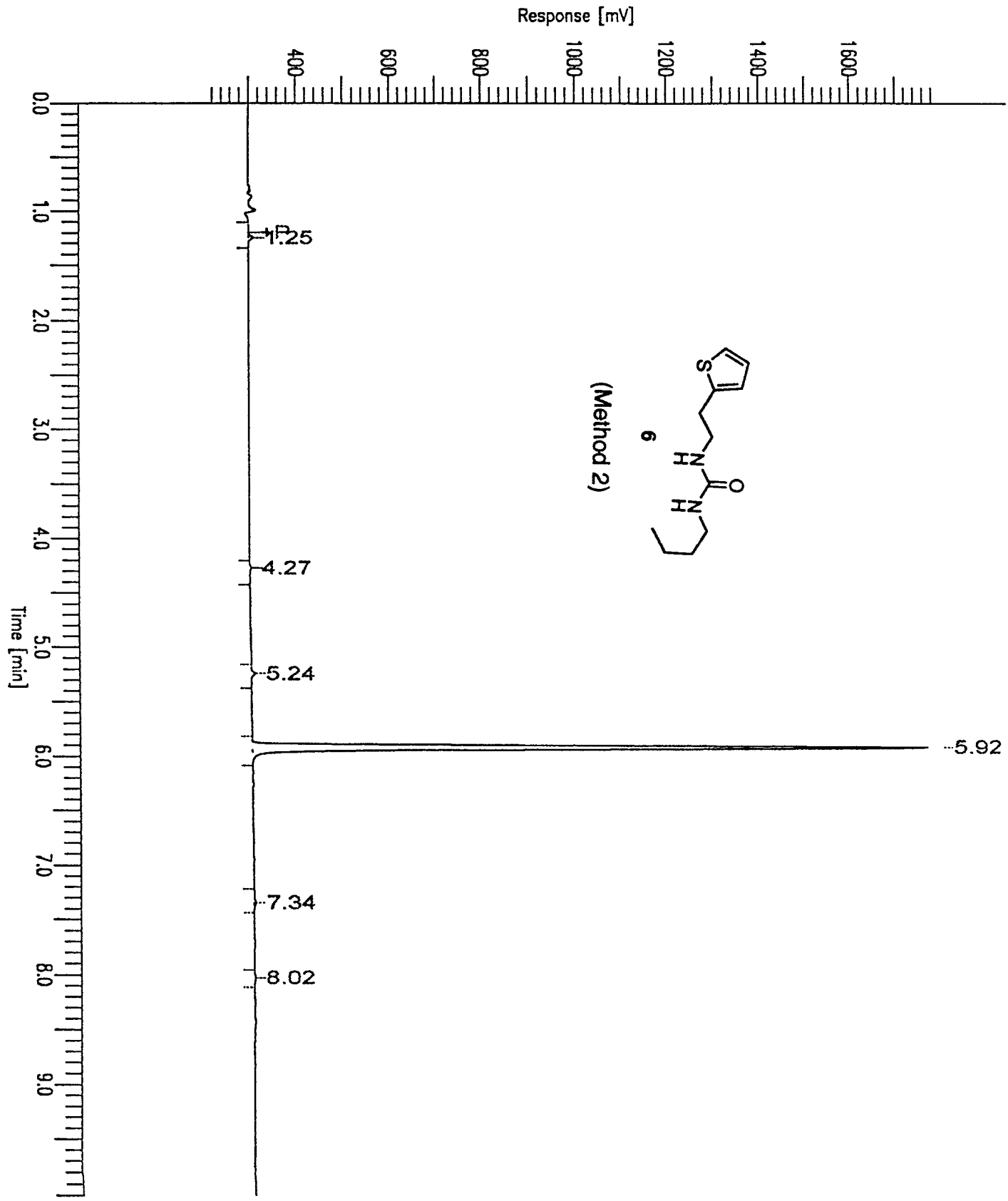
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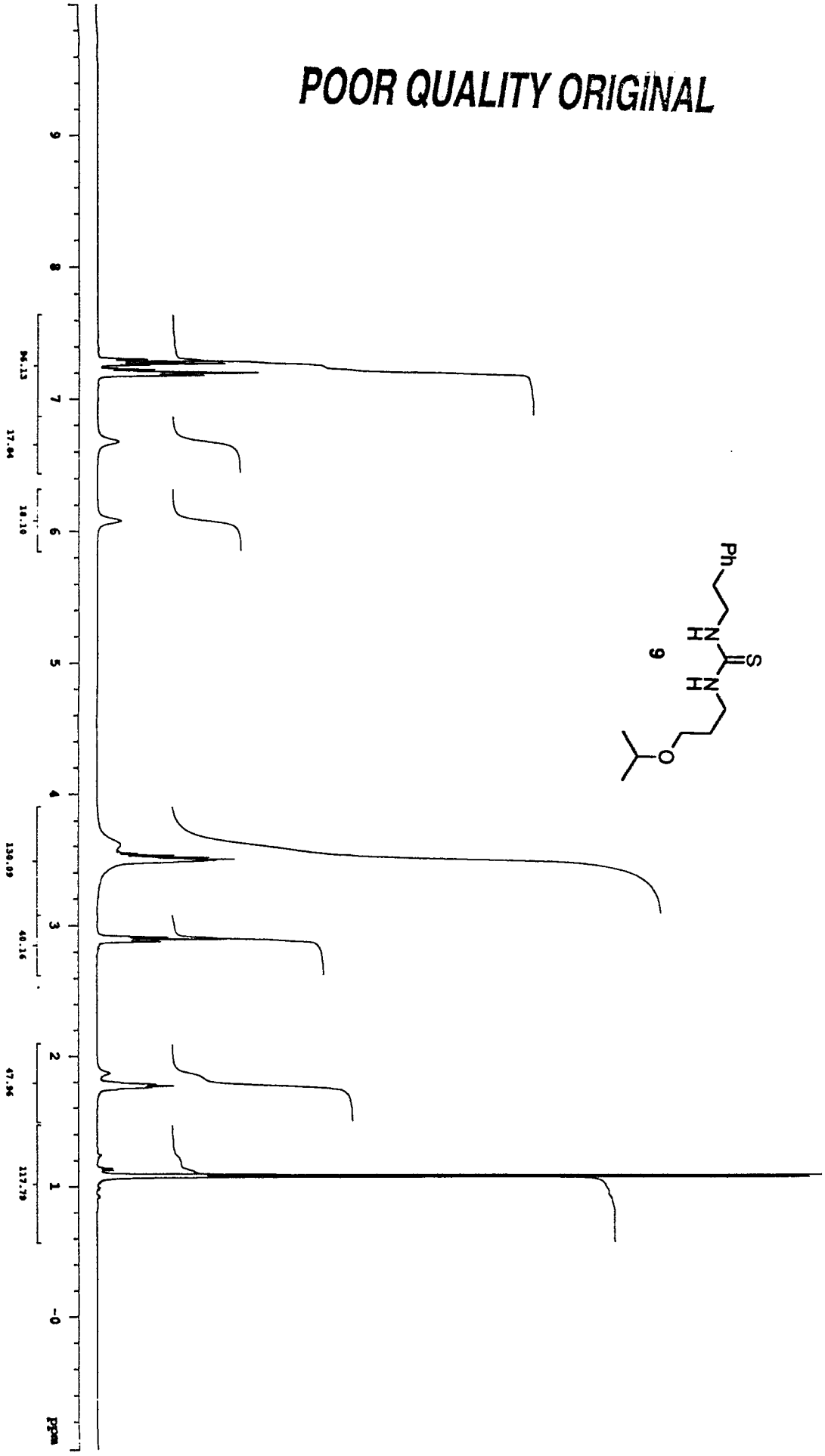

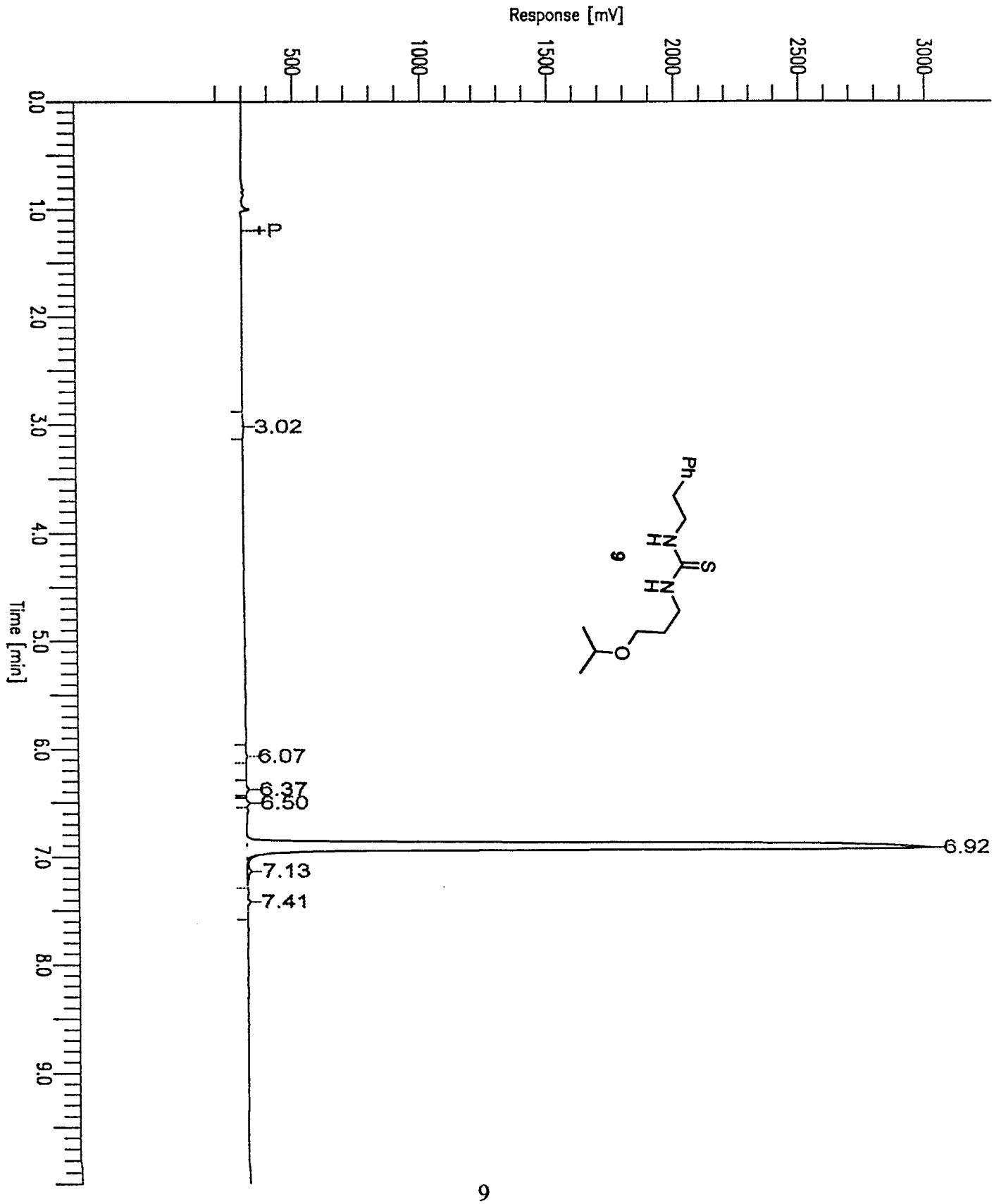
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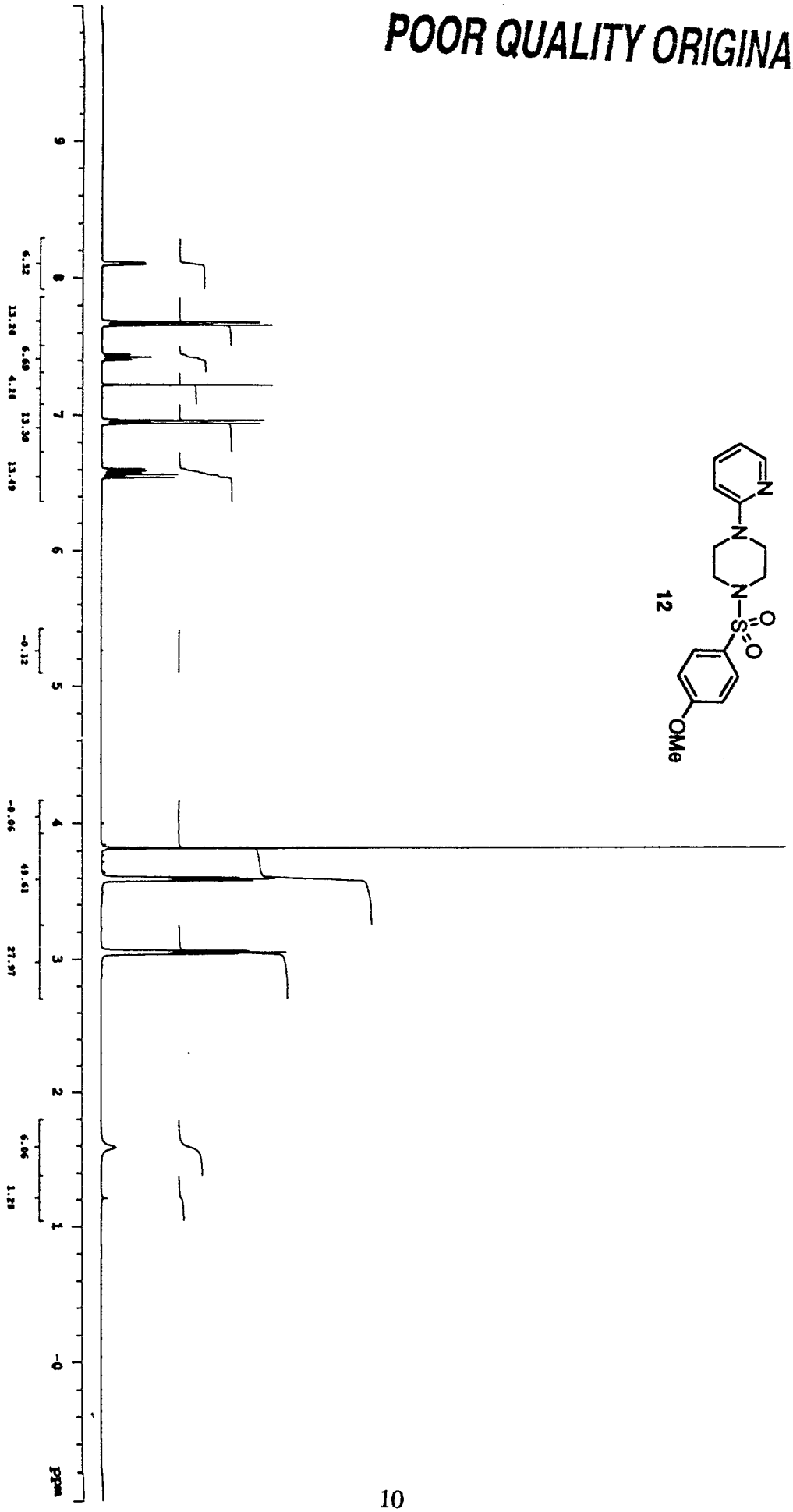

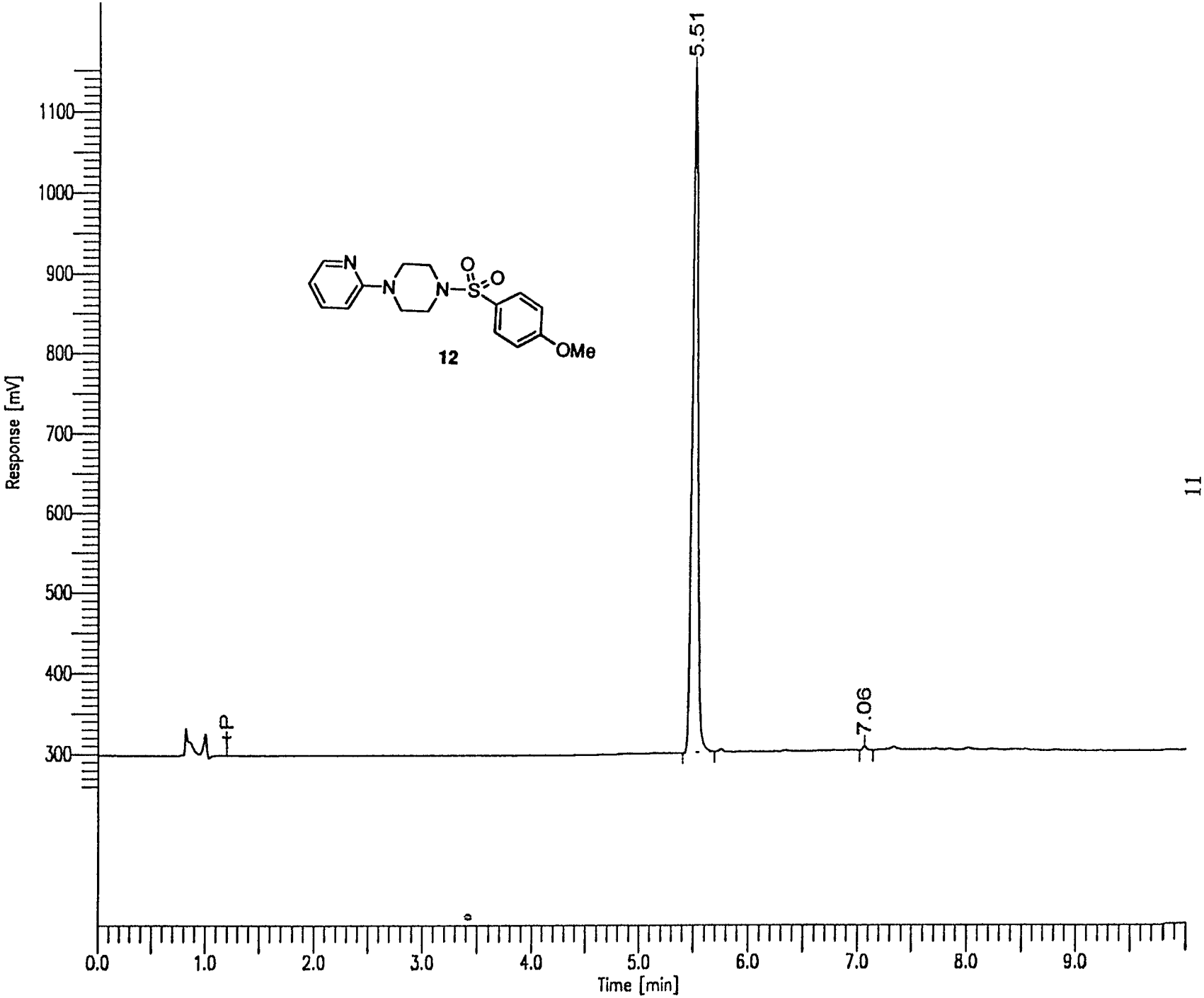

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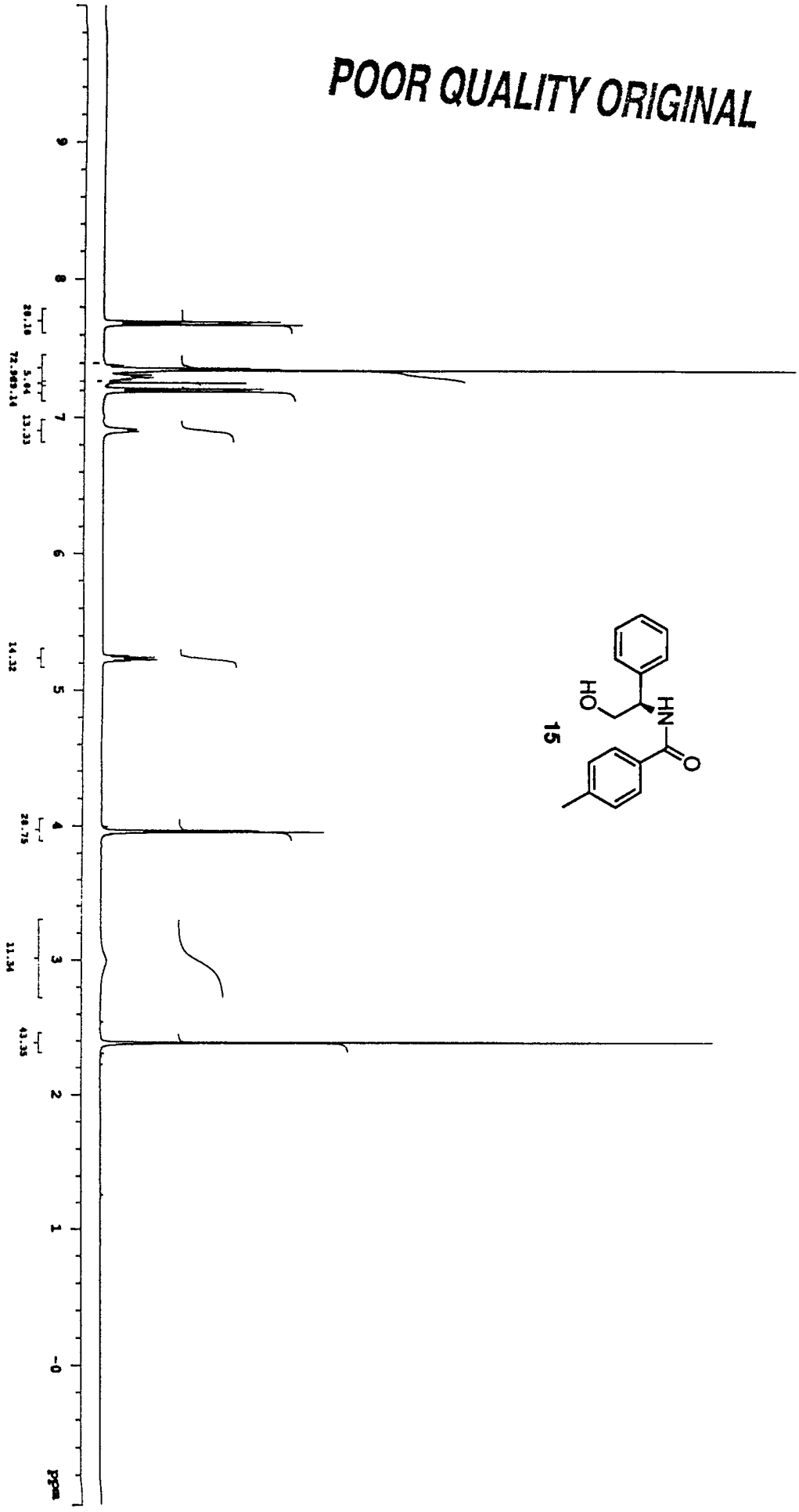

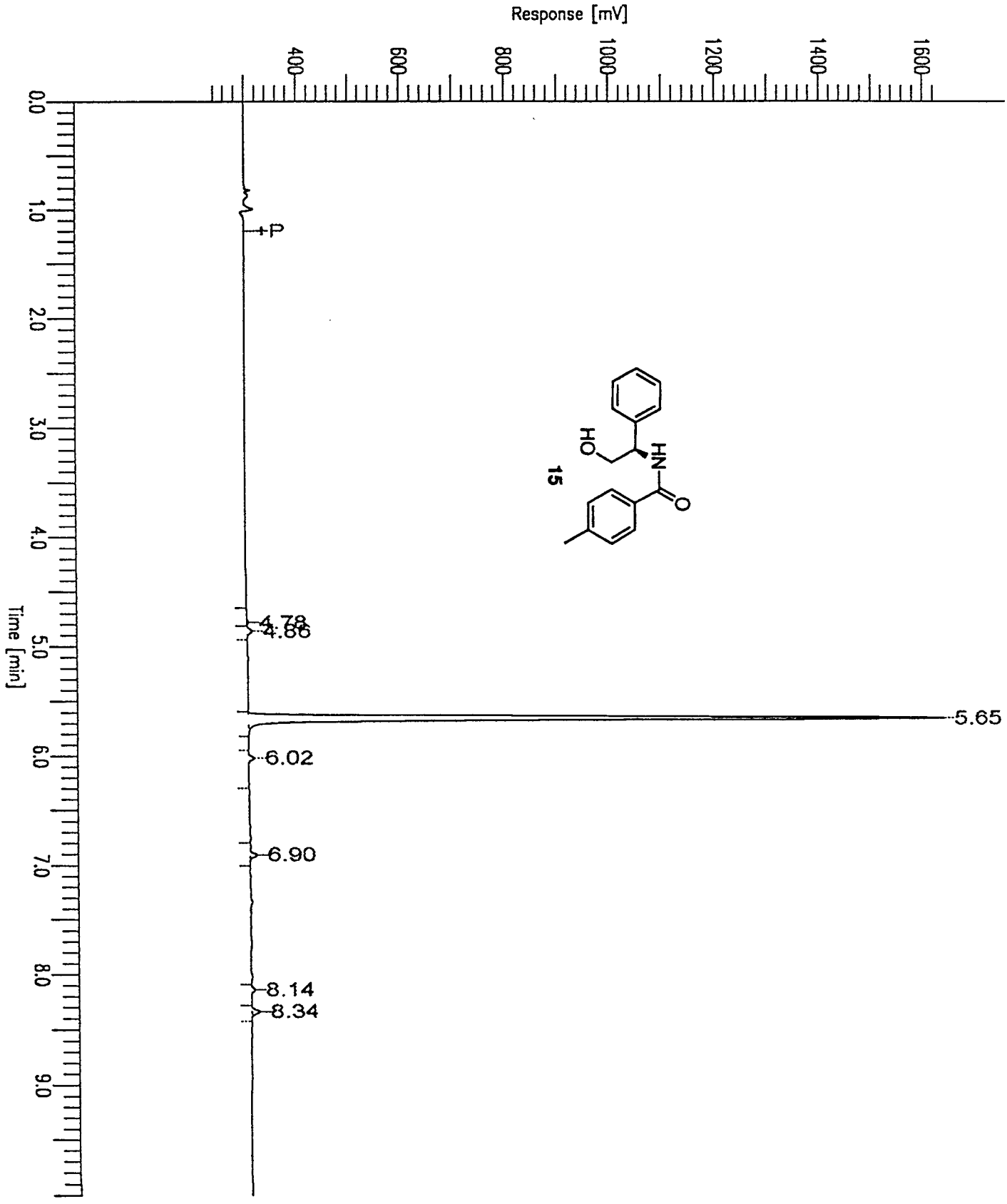
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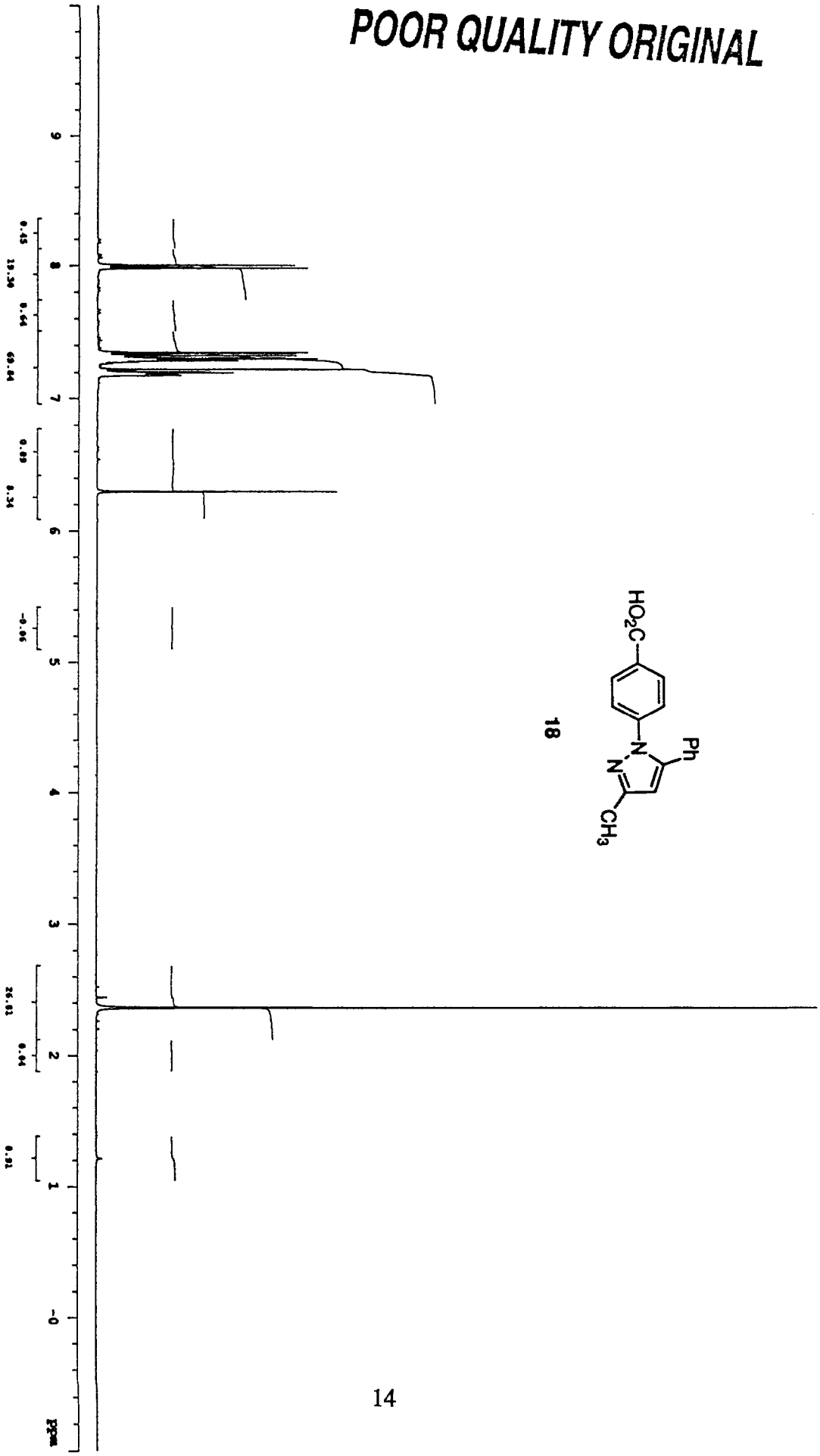

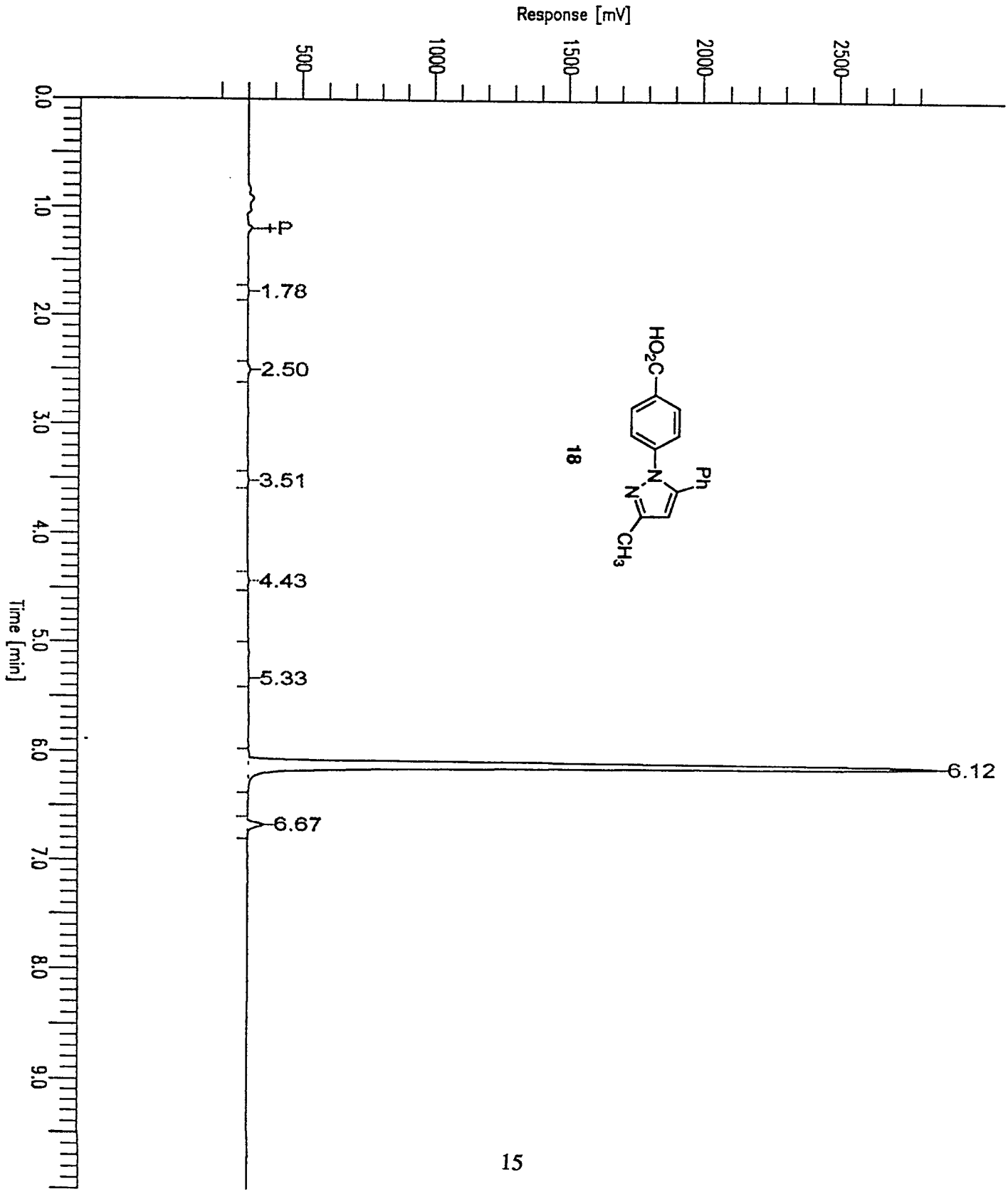
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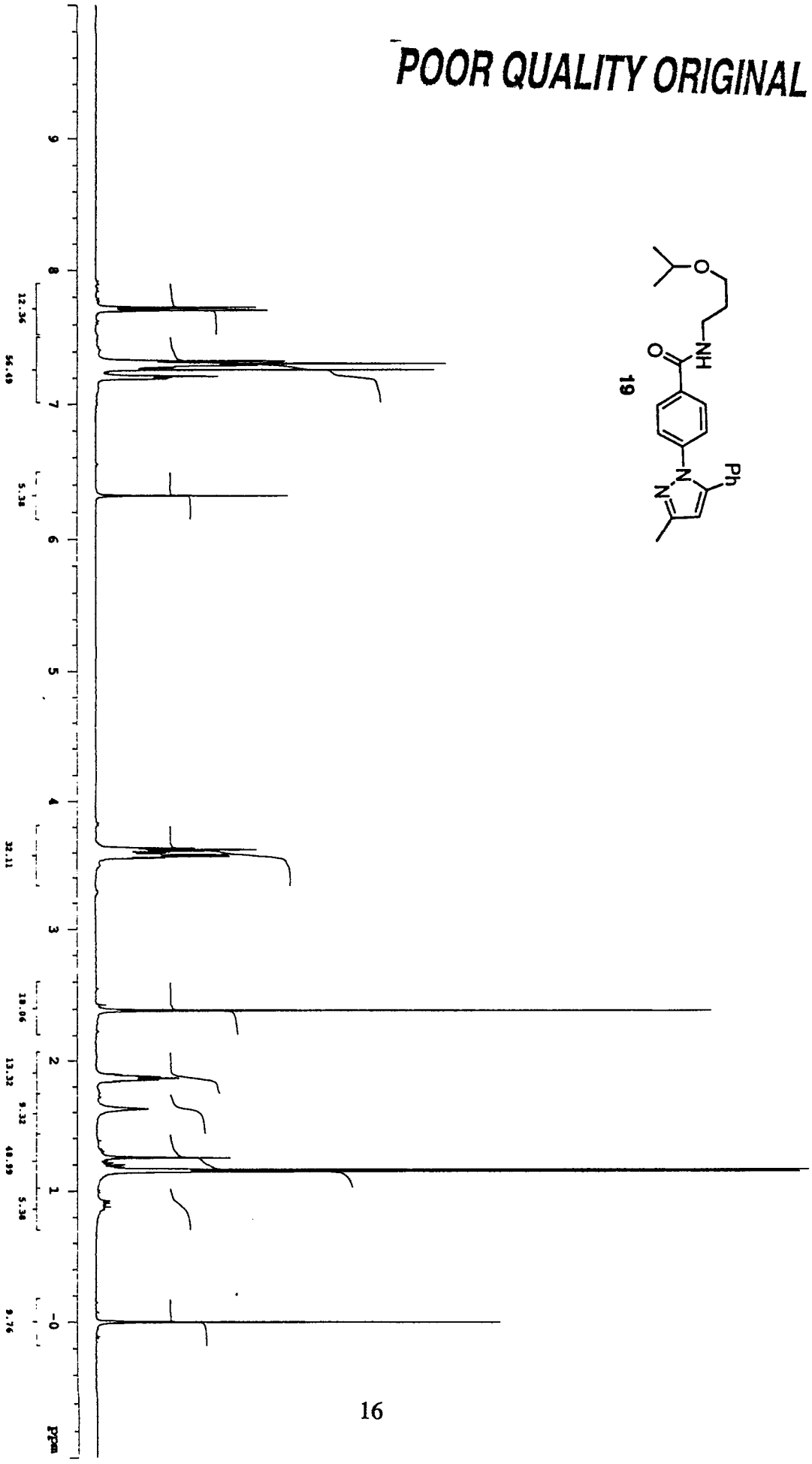

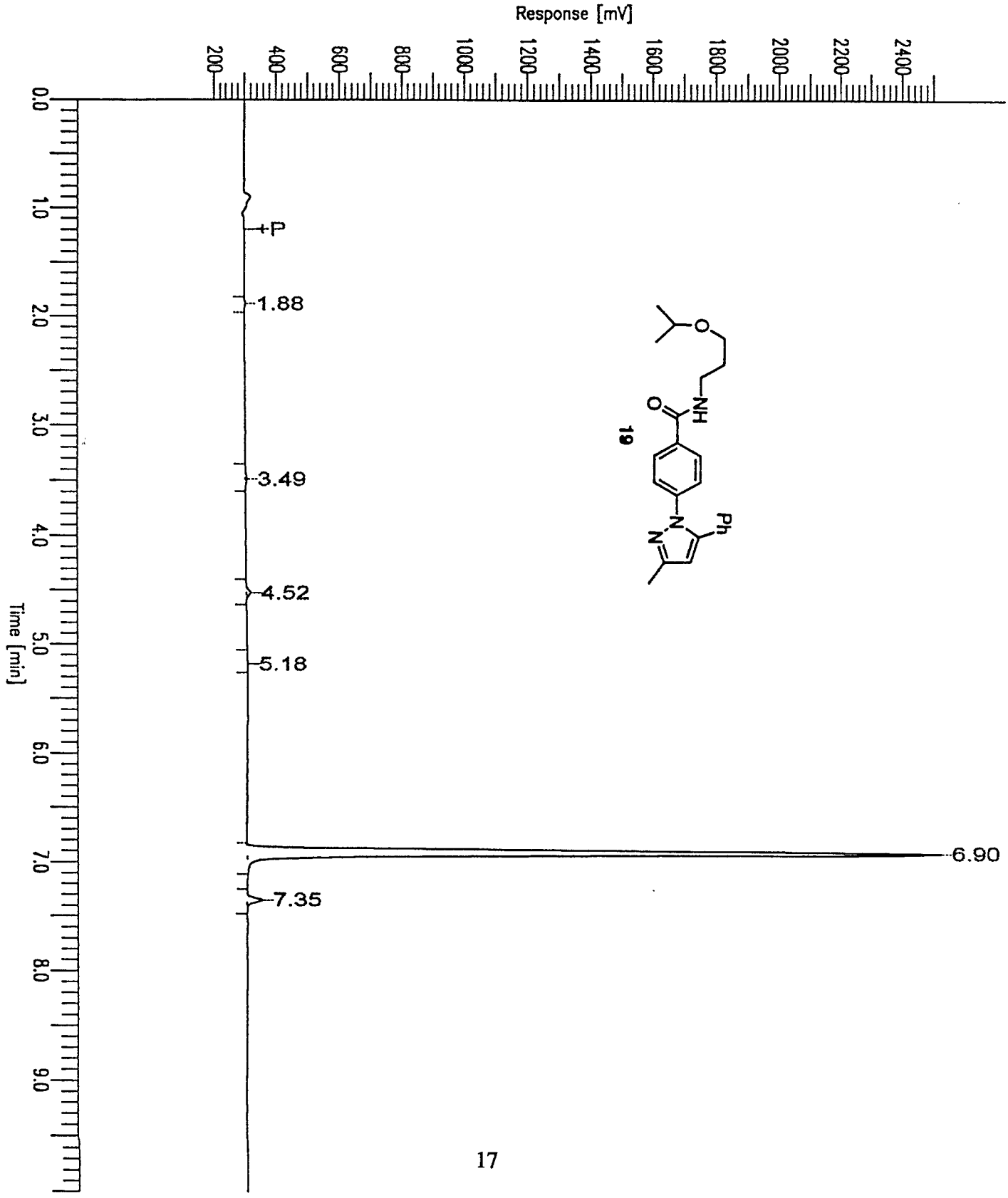
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