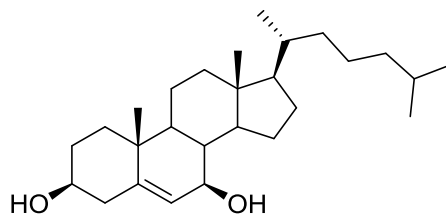


**Supplementary Fig. 1:**

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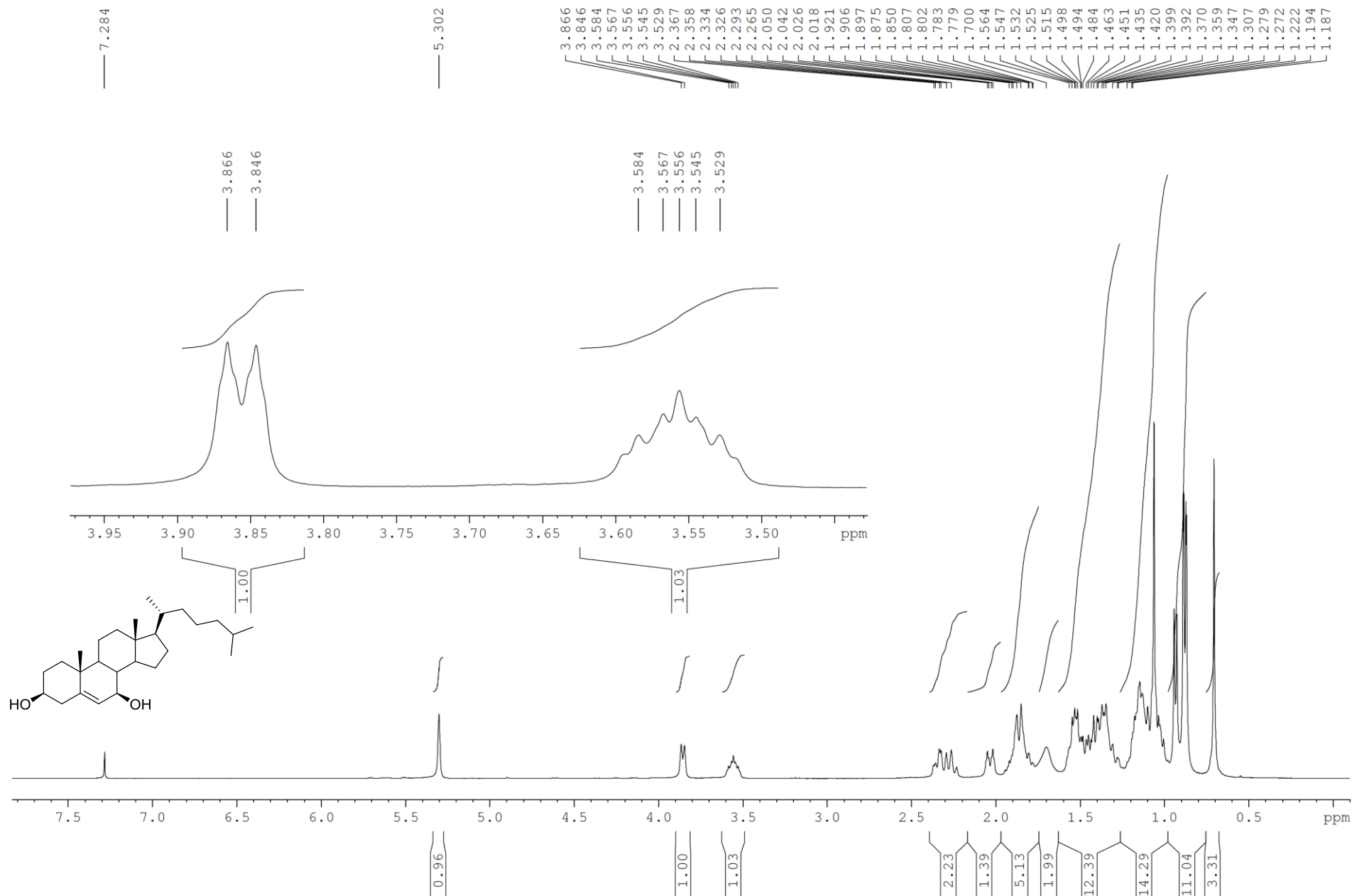
$^1\text{H}$  and  $^{13}\text{C}$  NMR spectra were recorded with a Bruker Avance 400 spectrometer.

**7β-Hydroxycholesterol**

$^1\text{H}$  NMR (400 MHz,  $\text{CDCl}_3$ ) ppm 5.27 (s, 1H, H-6), 3.85 (dt, 1H, H-7), 3.55 (m, 1H, H-3), 1.06 (s, 3H,  $\text{CH}_3$ -19), 0.93 (3H, d,  $J$ = 7Hz,  $\text{CH}_3$ -21), 0.88 and 0.80 (each 3H, 2d,  $J$ = 6.6 Hz,  $\text{CH}_3$ -26 and  $\text{CH}_3$ -27), 0.70 (s, 3H,  $\text{CH}_3$ -18), 0.69 (3H, s,  $\text{CH}_3$ -18),

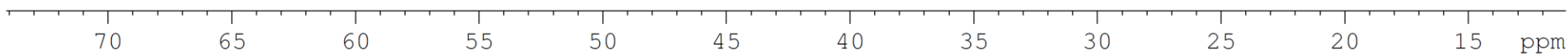
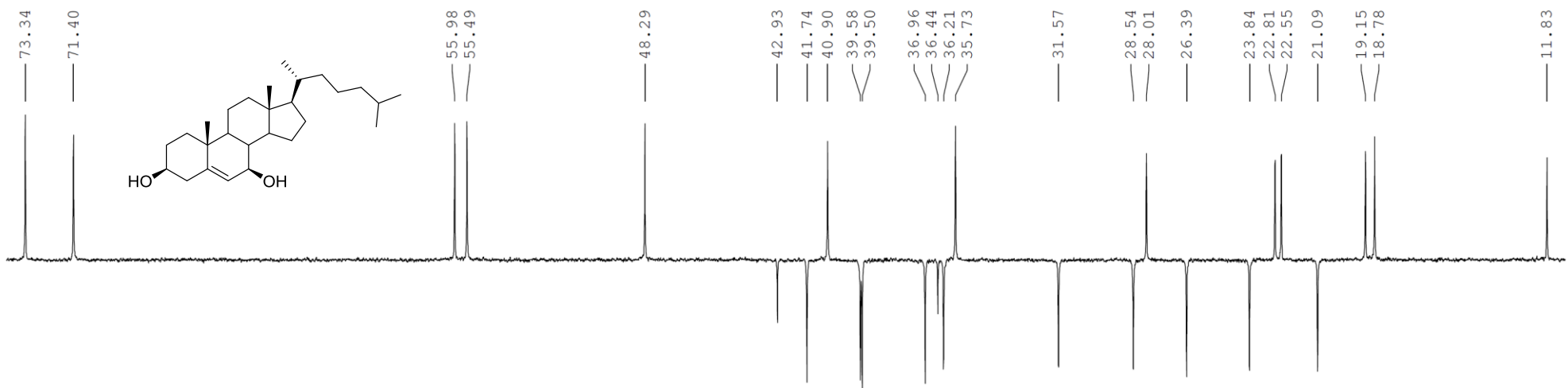
$^{13}\text{C}$  NMR(400 MHz,  $\text{CDCl}_3$ ) ppm 143.47, 125.47, 73.34, 71.40, 55.98, 55.49, 48.29, 42.93, 41.74, 40.90, 39.58, 39.50, 36.96, 39.44, 36.21, 35.73, 31.57, 28.54, 28.01, 26.39, 23.84, 22.81, 22.55, 21.09, 19.15, 18.78, 11.83.

# 7β-hydroxycholesterol



<sup>1</sup>H NMR spectrum (CDCl<sub>3</sub>, 400 MHz) of 7β-hydroxycholesterol

7b-hydroxycholesterol



<sup>13</sup>C NMR spectrum (CDCl<sub>3</sub>, 400 MHz) of 7b-hydroxycholesterol