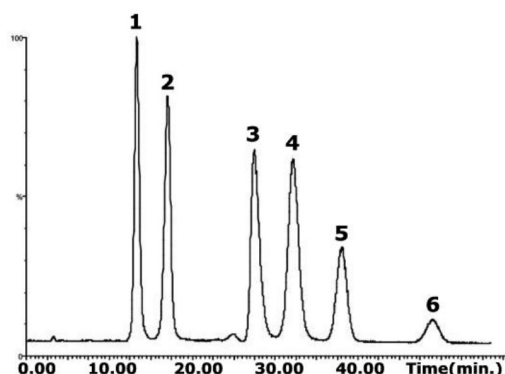
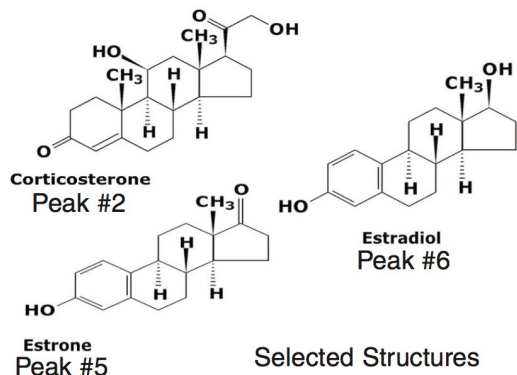


# Using LC-MS to Measure Steroids in Clinical Studies

## Atmospheric-pressure chemical ionization (APCI) detection



### Method Conditions

**Column:** Cogent UDC Cholesterol™, 4µm, 100Å

**Catalog No.:** 69069-7.5P

**Dimensions:** 4.6 x 75 mm

**Mobile Phase:** 50% DI H<sub>2</sub>O/ 50% MeOH/ 0.5% formic acid

**Injection vol.:** 5µL

**Flow rate:** 0.5 mL/min

**Detection:** APCI, Single Ion monitoring

#### Peaks:

Solute	Parent Ion m/z	Other peaks
1. Andrenosterone	301	283 (MH <sup>+</sup> - H <sub>2</sub> O)
		333 (MH <sup>+</sup> +O <sub>2</sub> )
2. Corticosterone	347	329 (MH <sup>+</sup> - H <sub>2</sub> O)
		311 (MH <sup>+</sup> - 2H <sub>2</sub> O)
		379 (MH <sup>+</sup> +O <sub>2</sub> )
3. 4-androstene-3,17-dione	287	319 (MH <sup>+</sup> + O <sub>2</sub> )
4. 11-alpha-acetoxypogesterone	373	313(MH <sup>+</sup> - H <sub>3</sub> CHOOH)
5. Estrone	271	253 (MH <sup>+</sup> - H <sub>2</sub> O)
6. Estradiol	273	254 (MH <sup>+</sup> - H <sub>2</sub> O)

### Discussion

Serum corticosterone concentrations are of clinical significance in adrenal dysfunction. Its measurement is sometimes used to diagnose apparent mineralocorticoid excess syndrome. It can also be used as a bio marker of malignancy in adrenal tumors.

Using the Cogent UDC Cholesterol column allows the simultaneous measurement of the two main estrogen fractions, estrone and estradiol in breast tumor tissue. Highly sensitive assays for estrone and estradiol for measuring low levels of estrogen in postmenopausal women, and monitoring estrogen levels in women receiving hormone replacement therapy can also be developed using the method presented in this note.

**Notes:** The total ion chromatogram of a mixture of six steroids presented substantiates the resolving power of the Cogent UDC Cholesterol column. The peak shapes are excellent (As < 1.1 for all solutes) using an isocratic mobile phase.