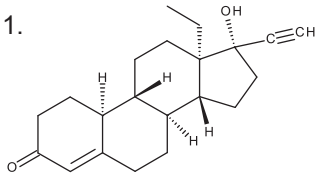
DL-Norgestrel / Levonorgestrel

The second-generation progestin DL-norgestrel has been available in its racemic form as birth control pill or menopausal hormone therapy, often in combination with an estrogen. Levonorgestrel (D-norgestrel) is the active enantiomer, while dextronorgestrel (L-norgestrel) is completely inactive.

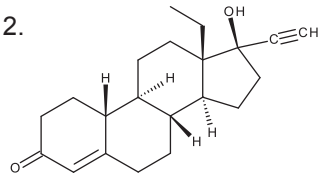
DL-norgestrel has been discontinued nowadays, instead levonorgestrel is used which allows much lower doses. It is marketed either alone (e.g. Kyleena®, Mirena®) or in combination with an estrogen such as ethinylestradiol as well (e.g. Asumate®, Microgynon®). It is available in several different formats.

1.



L-Norgestrel

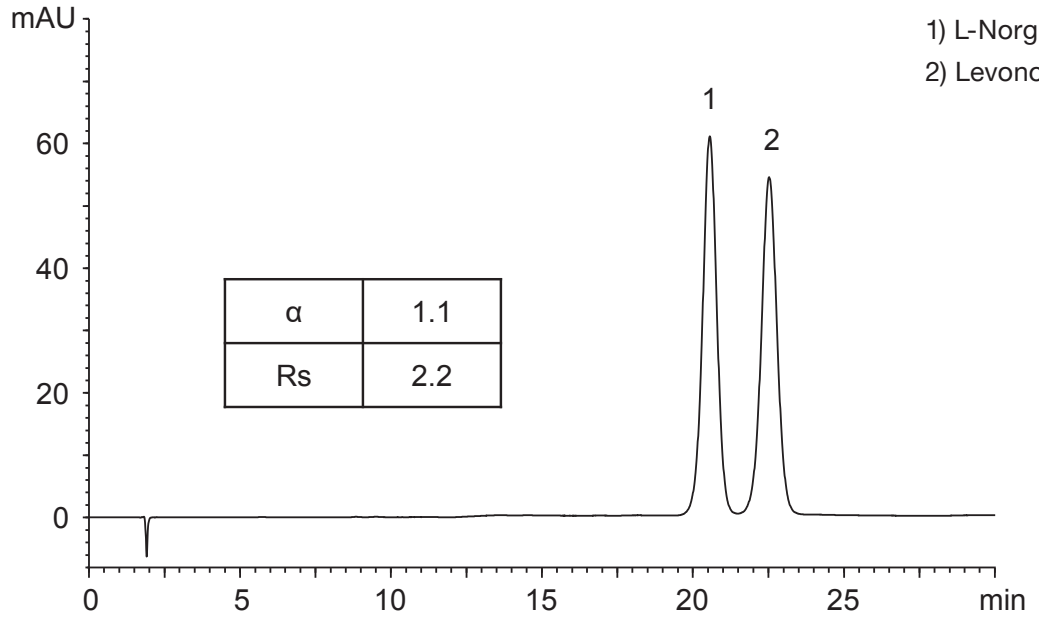
2.



D-Norgestrel
(Levonorgestrel)

Even though levonorgestrel can be be prepared by asymmetric synthesis, it is very important to separate and identify the two enantiomers from each other and/or quantify them. They can reliably be separated from each other using YMC's immobilised CHIRAL ART Cellulose-SC column in RP mode.

The immobilised CHIRAL ART columns are very robust and allow for use in RP mode without any restrictions in regard of eluents or sample solvents. Here, a mixture of acetonitrile and water with an addition of 0.1 % formic acid was used, making the method MS compatible as well.



Column:	CHIRALART Cellulose-SC (3 µm) 150 x 2.0 mm ID
Part No.:	KSC99S03-1502WT
Eluent:	acetonitrile/water/formic acid (45/55/0.1)
Flowrate:	0.2 mL/min
Temperature:	25°C
Detection:	UV at 240 nm
Injection:	1 µL (0.5 mg/mL)

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