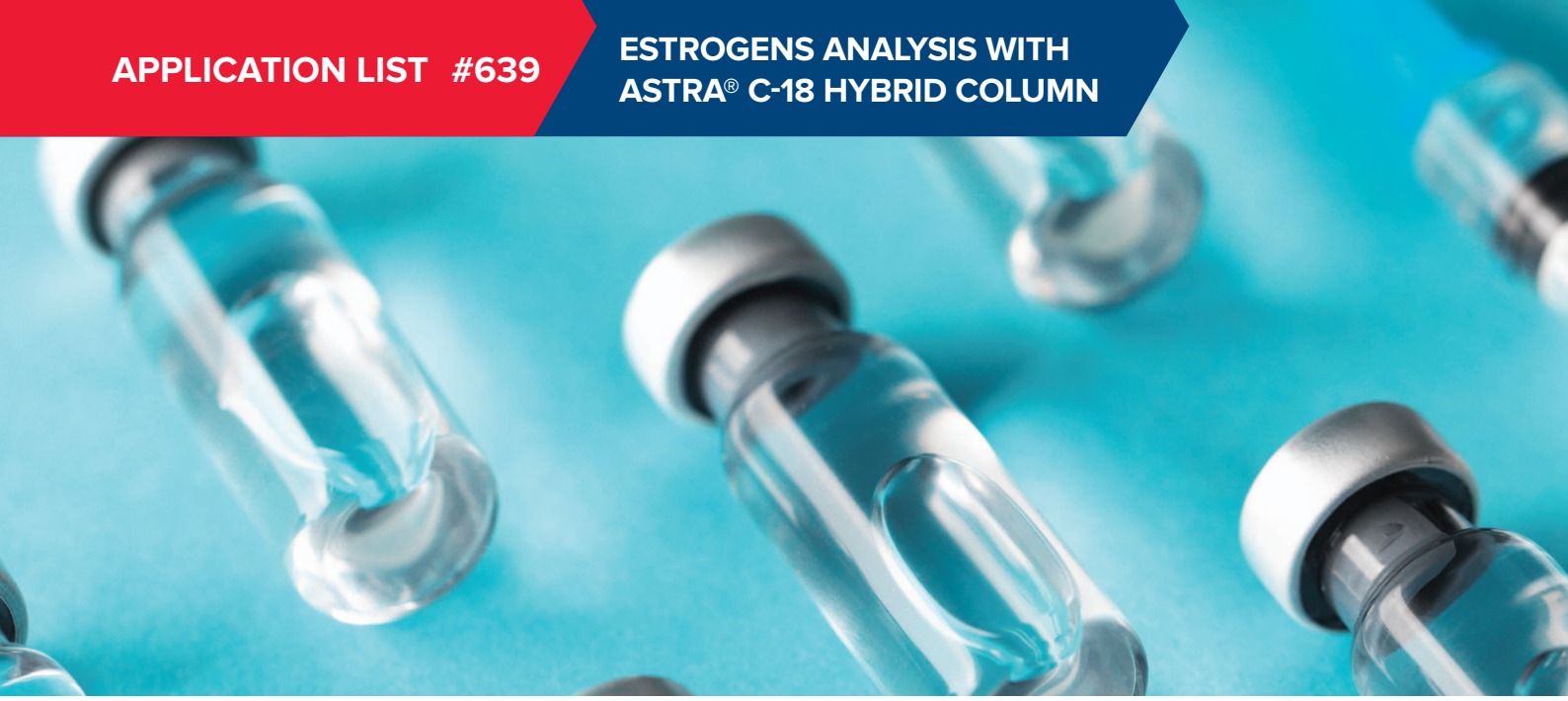

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ChromLine

ESTROGENS ANALYSIS WITH ASTRA® C18-HYBRID COLUMN

ABSTRACT

This application describes a quick and robust LC-MS/MS method for analysis of estrone (E1 – shown in the upper chromatograms) and estradiol (E2 – shown in the lower chromatograms), two naturally occurring estrogens in the human body. The ASTRA® C18-Hybrid column provides perfect selectivity and peak symmetry for target compounds throughout a long injection sequence.

INTRODUCTION

Analysis of endogenous estrogens is challenging due to the low physiological concentrations and weak UV absorption. Multiple metabolites with similar chemical structures and close molecular weights as well as co-eluting substances from biological fluids may cause significant ion suppression in mass spectrometry. Ionization of estrogens is inefficient, introduction of derivatization agents may enhance ionization, but non-specific product ions can be generated. Therefore, the method generating derivatives with product ions specific to individual estrogens is highly demanded.

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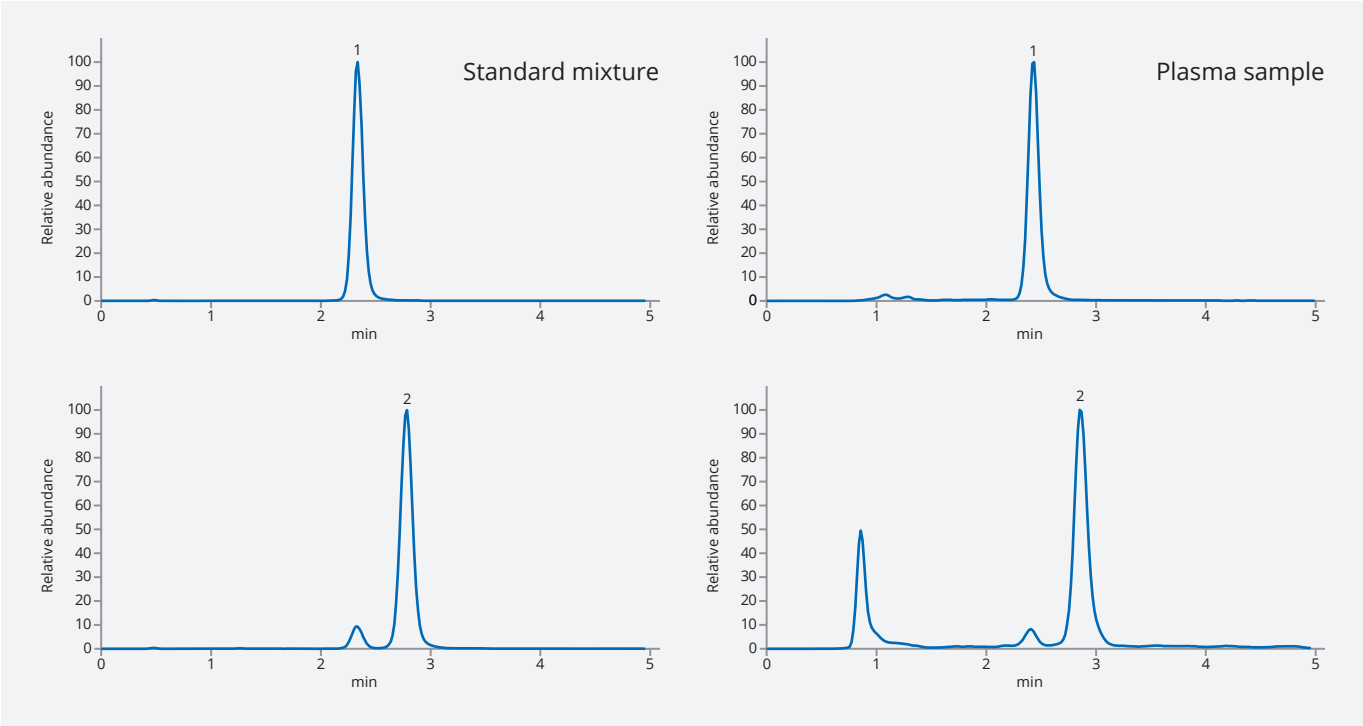
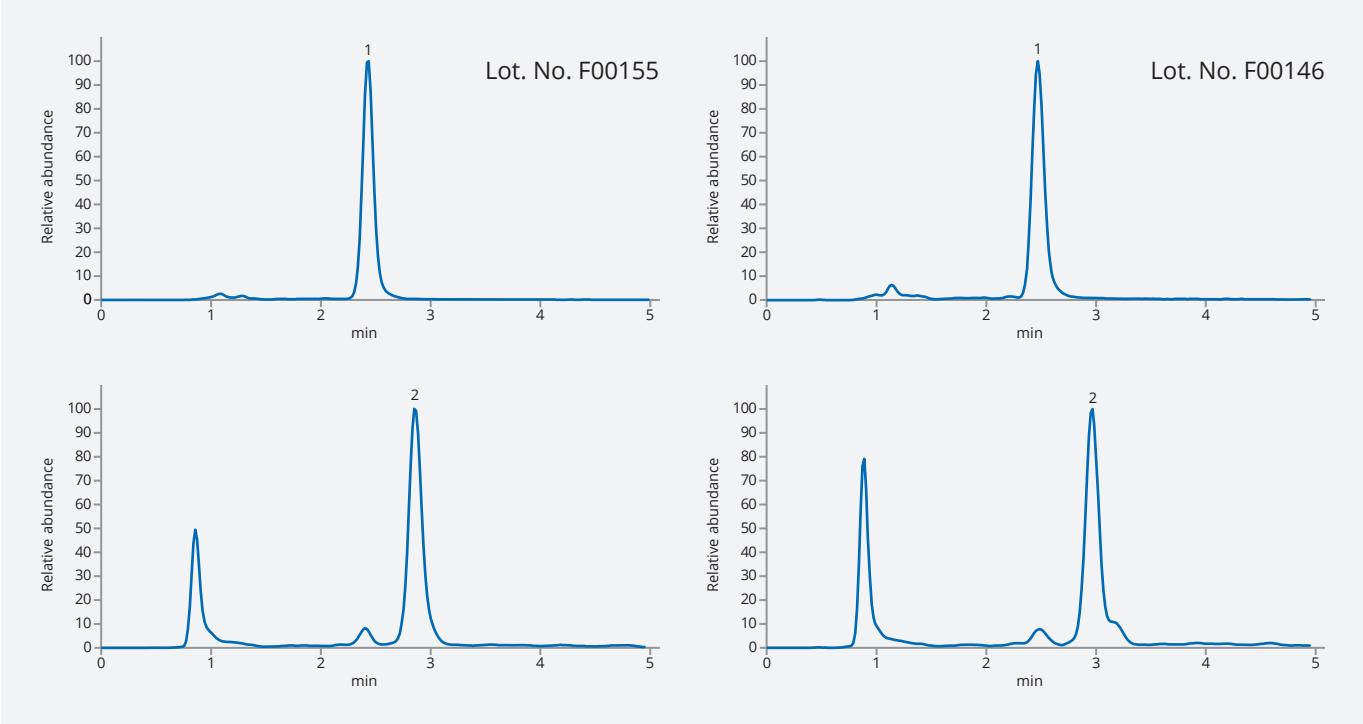
Estrogens Analysis with ASTRA® C18-Hybrid column



Analysis of derivatized hormones E1 and E2 in standard mixture and plasma sample on ASTRA® C18-Hybrid column



Analysis of plasma sample on different lots of ASTRA® C18-Hybrid column

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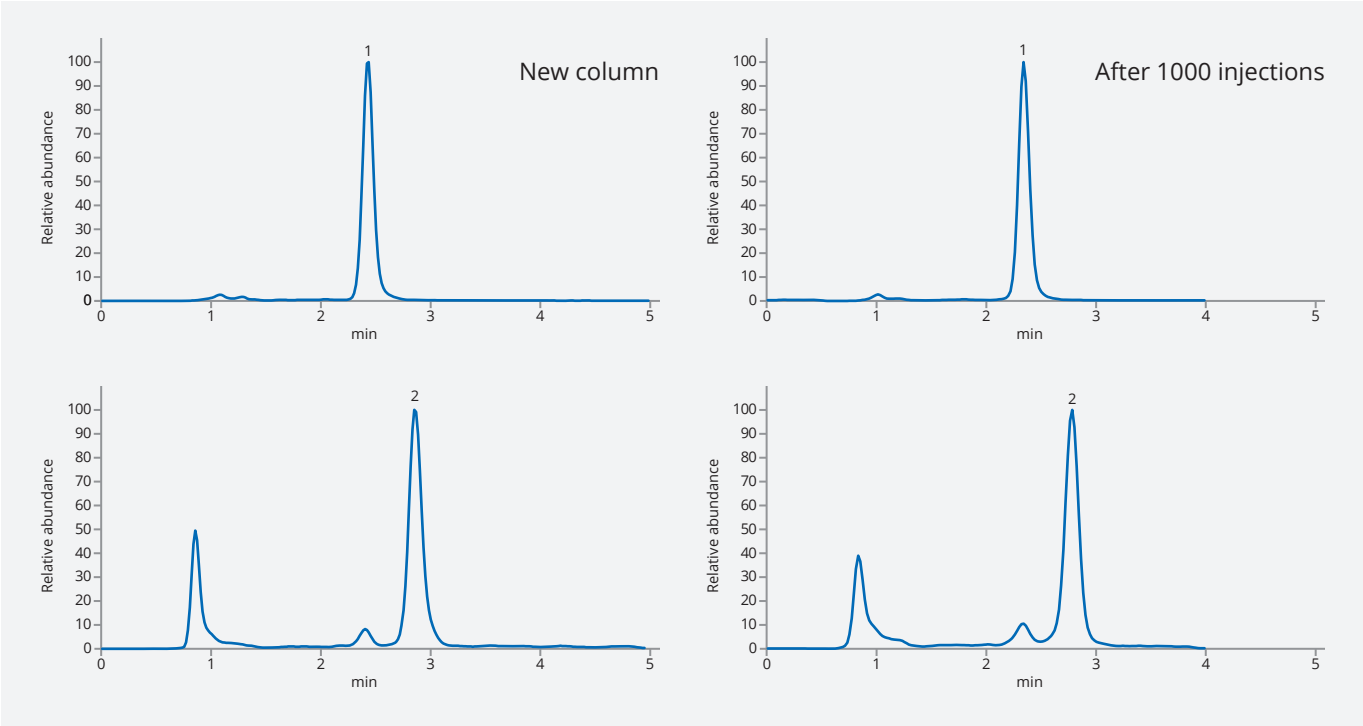
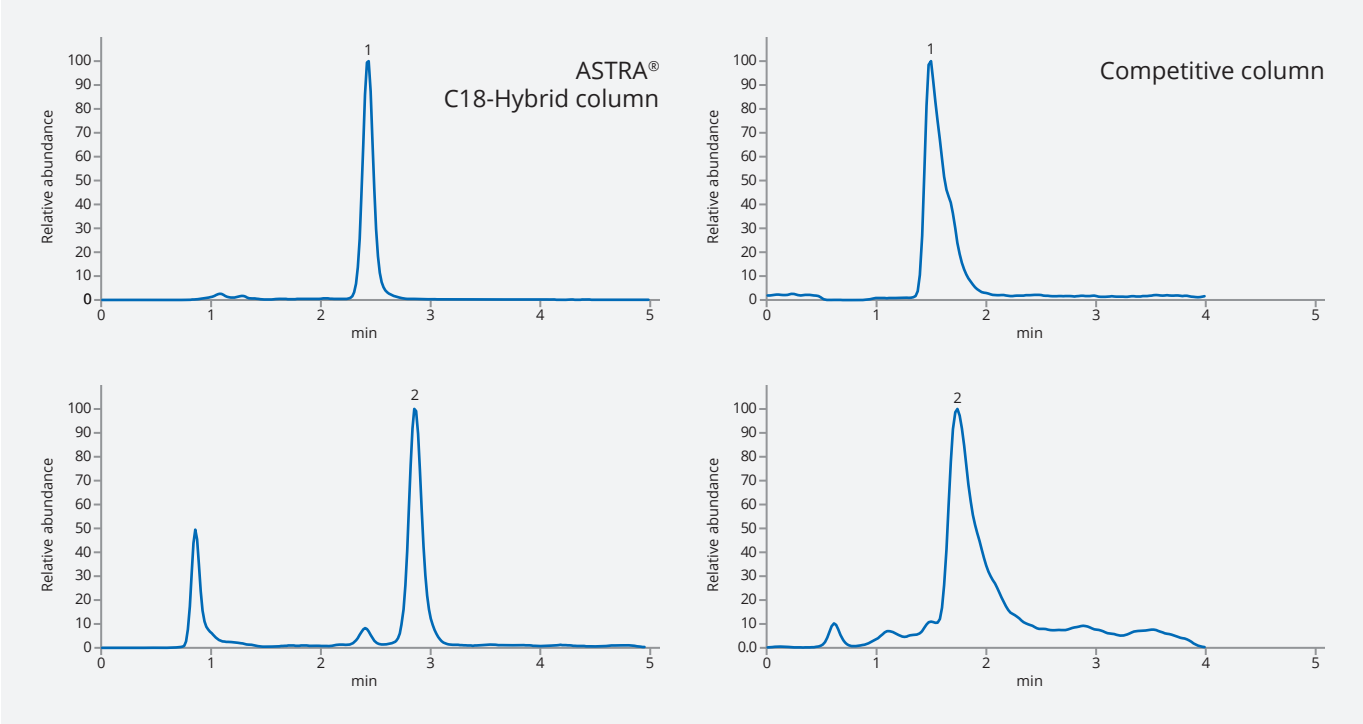
Estrogens Analysis with ASTRA® C18-Hybrid column



Analysis of plasma sample on new column ASTRA® C18-Hybrid and after 1000 injections



Analysis of plasma sample on column ASTRA® C18-Hybrid and competitive column

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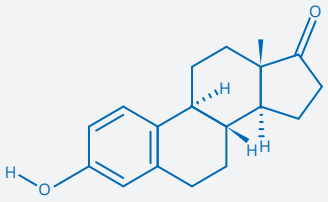
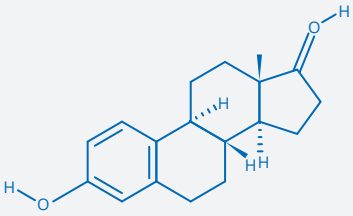
Estrogens Analysis with ASTRA® C18-Hybrid column

Column	ASTRA® C18-Hybrid, 5 µm
Dimensions	50 mm × 4.6 mm
Part number	AST-6016-LG46
Mobile phase	70 % MeOH + 10 % 50mM $(NH_4)_2CO_3$ + 20 % UPW Detailed information about gradient table is proprietary
Flow rate	1 mL/min
Temperature	50 °C
Injection volume	60 µL
LC-MS conditions	Proprietary
Analytes	**1. Estrone (E1), CAS: 53-16-7** **2. Estradiol (E2), CAS: 50-28-2**



Estrone (E1)



Estradiol (E2)

APPLICATION LIST #639

ESTROGENS ANALYSIS WITH ASTRA® C-18 HYBRID COLUMN

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