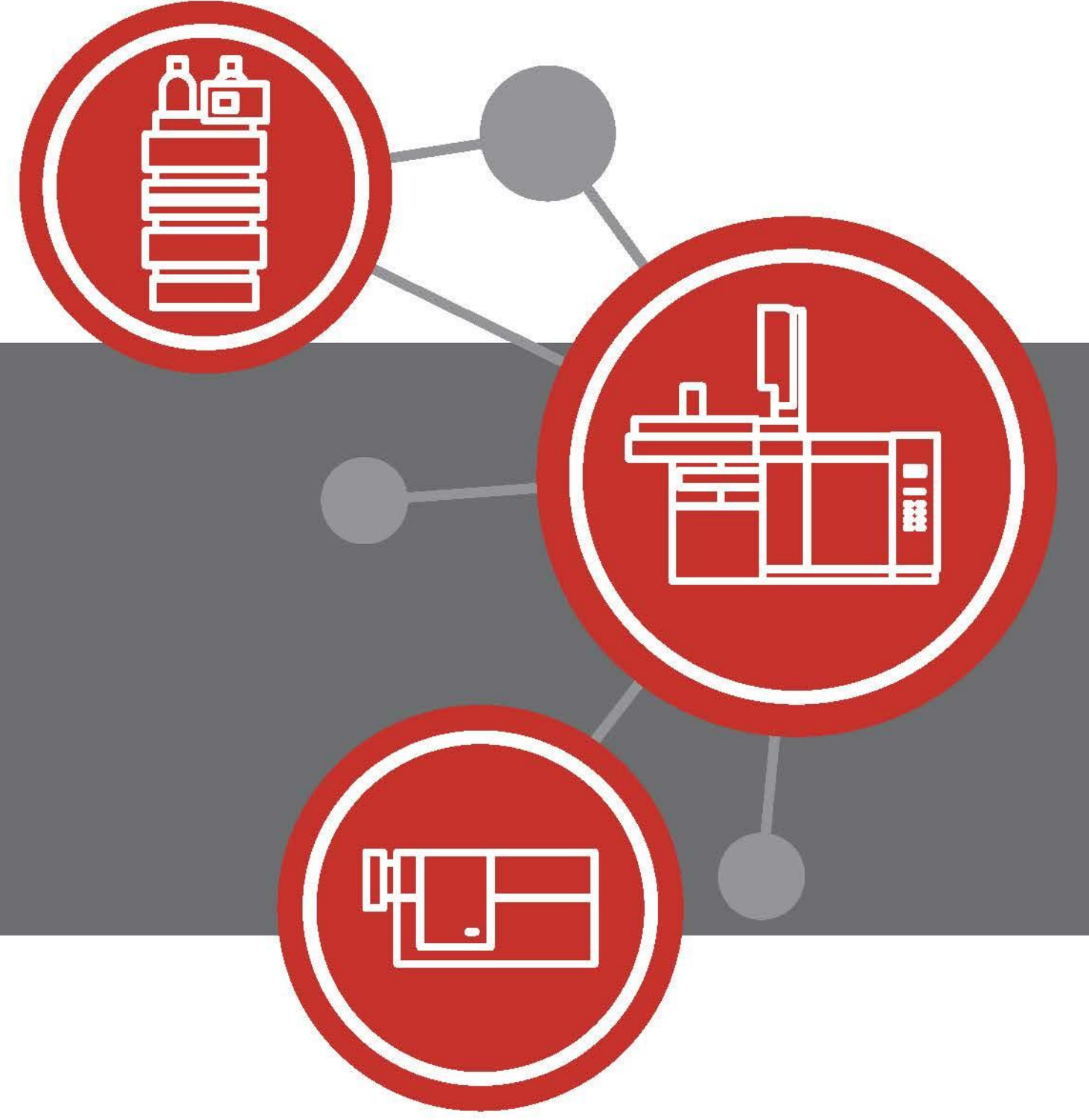


LPG Gazlarda GC-MS ile BTEX Analizi



BTEX bileşikler (benzen, toluen, etilbenzen ve ksilen izomerleri) önemli çevresel risk oluşturmaktadır. Özellikle benzen kanserojen olup LPG kullanımında solunabilir. Bu nedenle BTEX miktarı insan sağlığı açısından sınırlandırılır. LPG bileşenleri propan ve bütan olup BTEX bileşikler, rafineri proseslerinden veya kontaminasyondan gelebilir. Yüksek BTEX LPG'nin saf olmadığını ve proses kontrolünde sorun olabileceğini gösterir. Bu nedenle Ürün kalitesi ve saflık kontrolü yapılması gerekmektedir. Ayrıca uluslararası standartlar (EN) BTEX için bazı sınırlar koymaktadır.



Tablo 1 : Agilent 8890 GC Parametreleri

Parameters	
Column	Agilent DB - 50m
Inlet mode	(SSL)
Carrier Mode	Constant Flow
Inlet temperature	250 °C
Septum Purge Flow	5 mL/min.
Split Ratio	10:1
Carrier Gas	He
Pressure	15.502 psi
Max Oven Temp.	500 °C
Carrier Gas	He
Septum Purge Flow	5 mL/min.

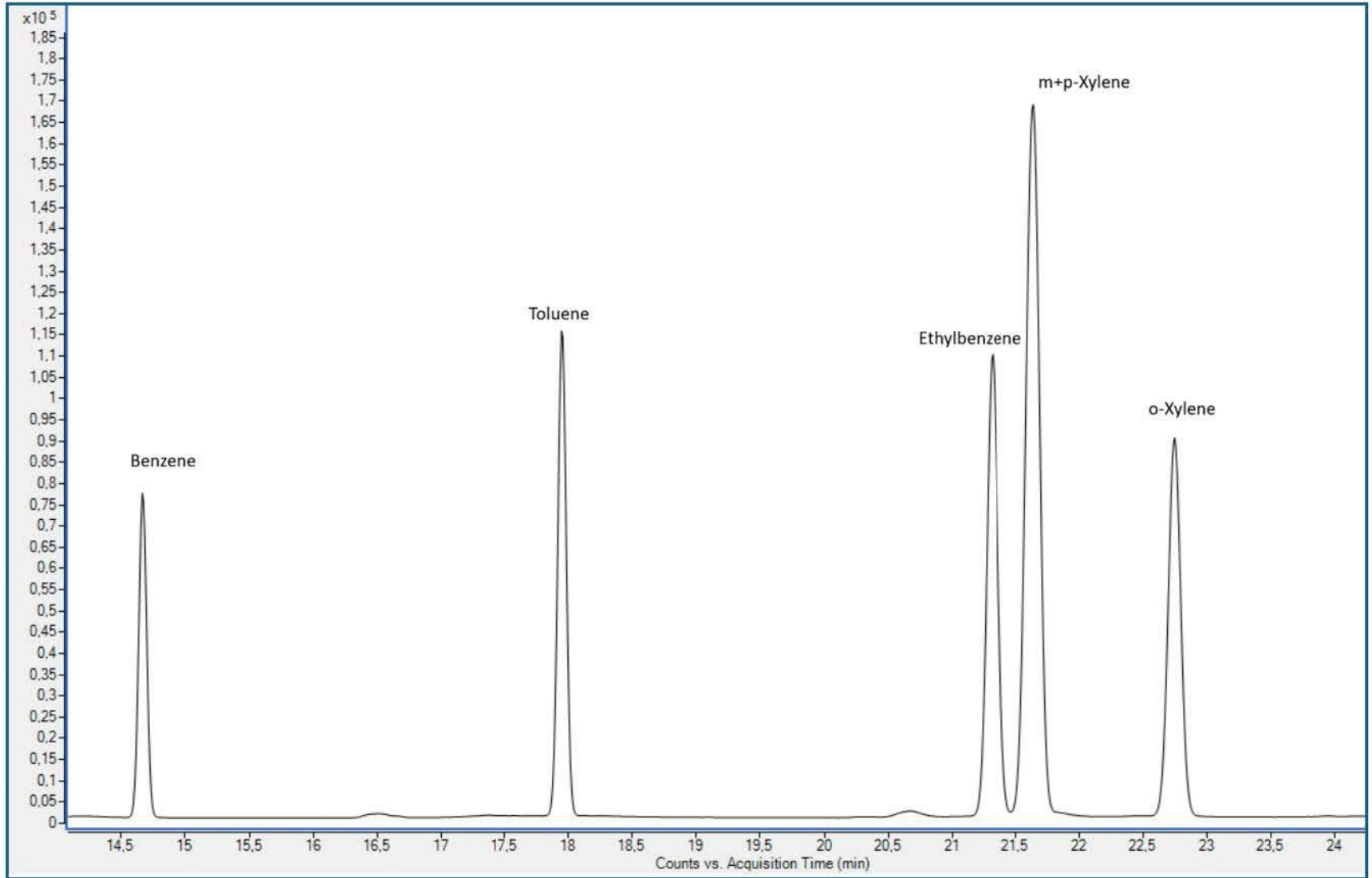
Tablo 2 : EI & MS Parametreleri

Parameters	
MS transfer line temp.	250 °C
ionization mode	EI
MS source temp.	250°C
MS Quad temp.	150°C

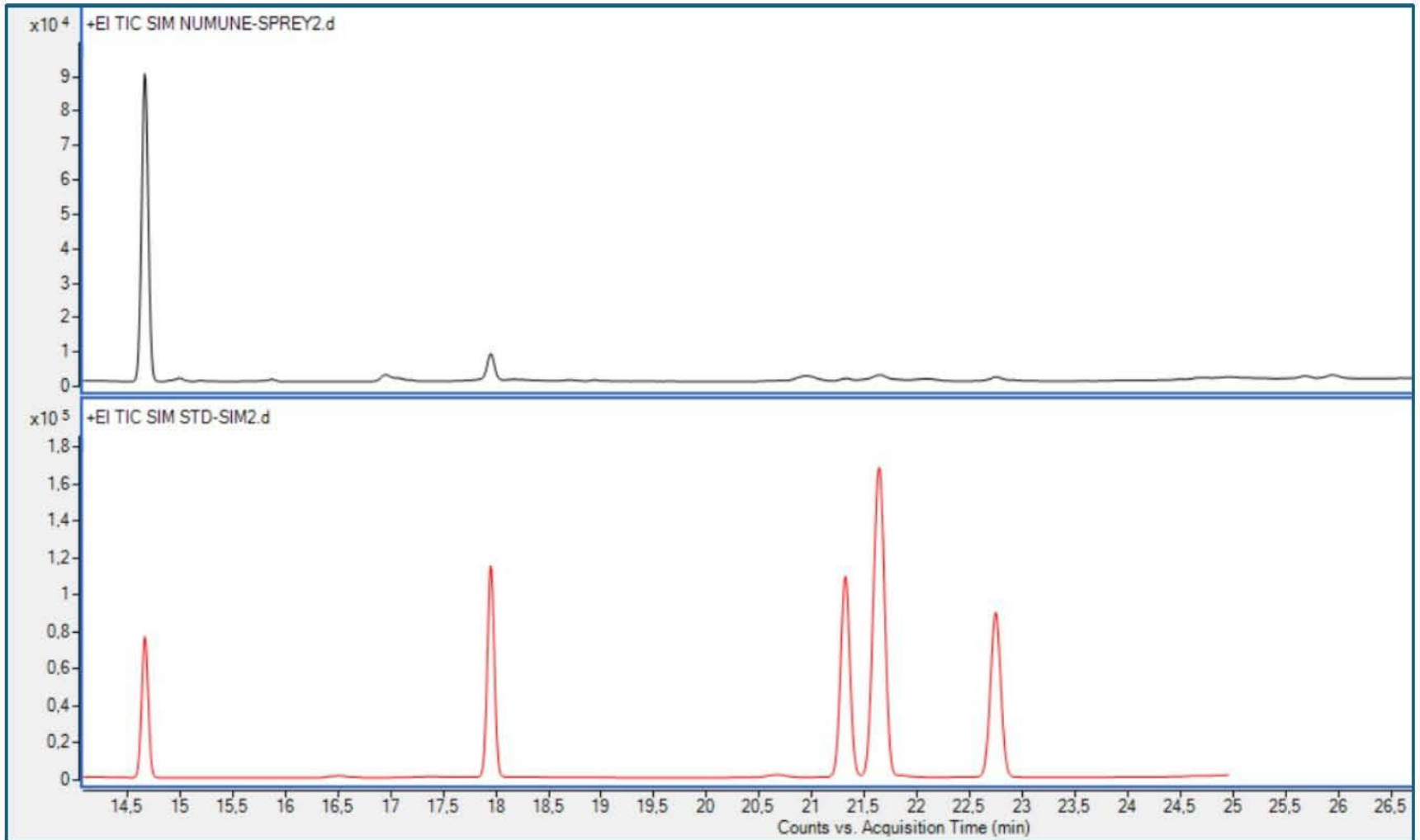
Tablo 3 : Alikonma Süreleri

	RT. (min)
Benzene	4,55
Toluene	7,84
Ethylbenzene	21,50
m-xylene	21,55
p-xylene	21,55
o-xylene	22,74



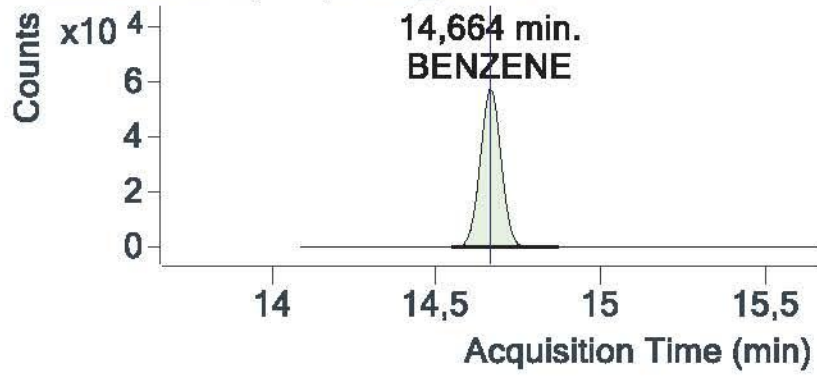


Şekil 1: Standart Likit Gaz (Benzen,toluene,ethylbenzene,m-p-o-xylene 6 ppm) Kromatogramları

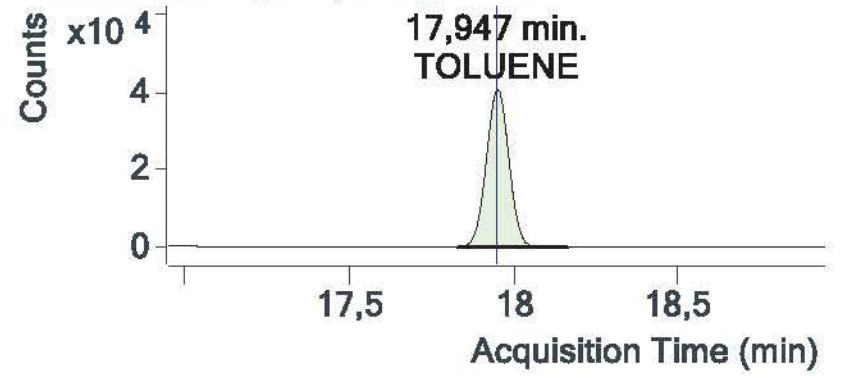


Şekil 2: Likit Gaz Numunesi ve Standart Likit Gaz Kromatogramları

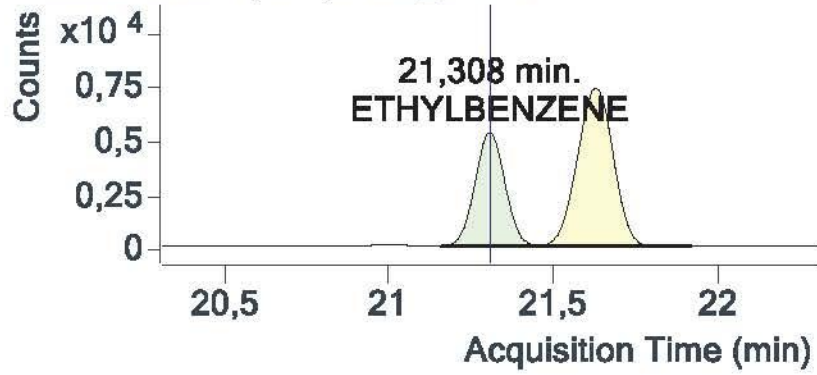
+ Selected Ion (78,0) STD_SIM.d



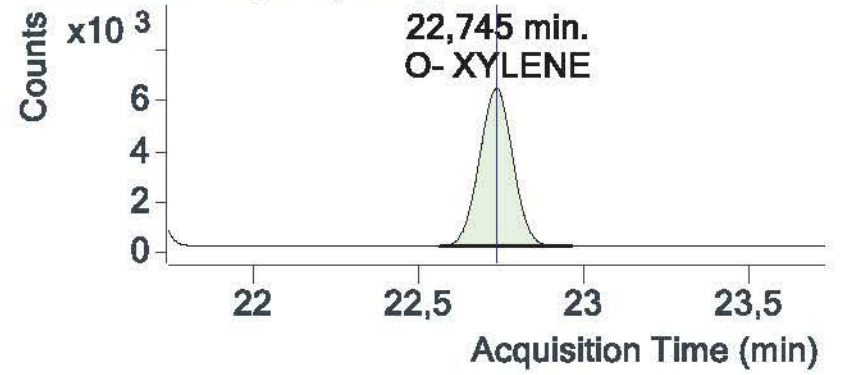
+ Selected Ion (92,0) STD_SIM.d



+ Selected Ion (51,0) STD_SIM.d

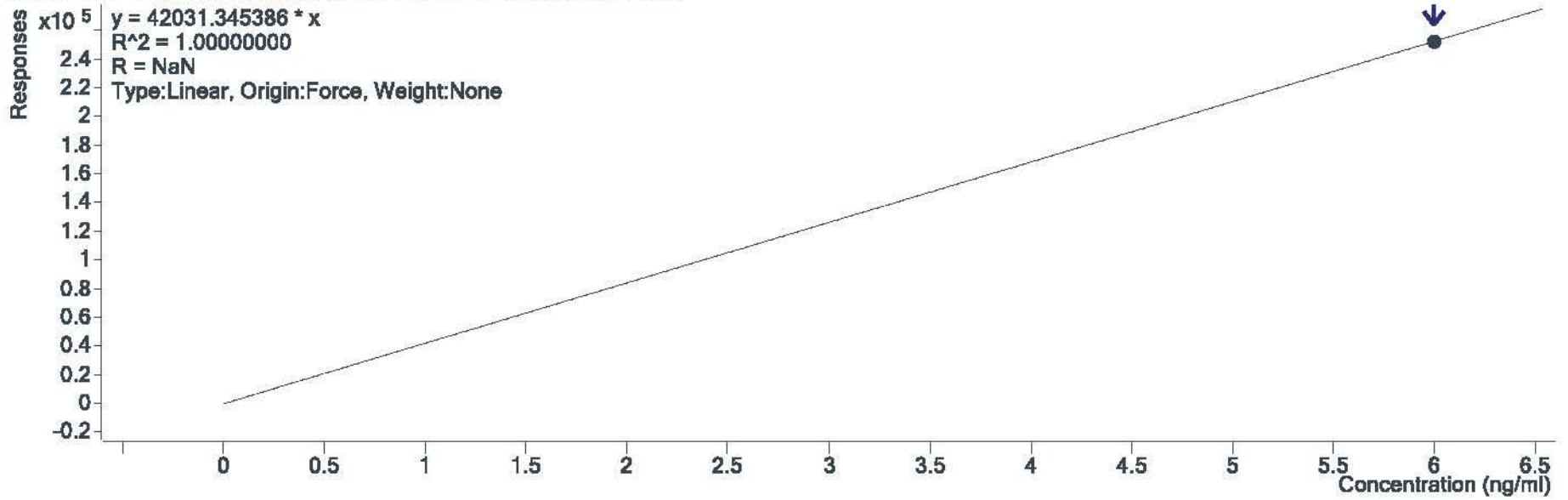


+ Selected Ion (77,0) STD_SIM.d

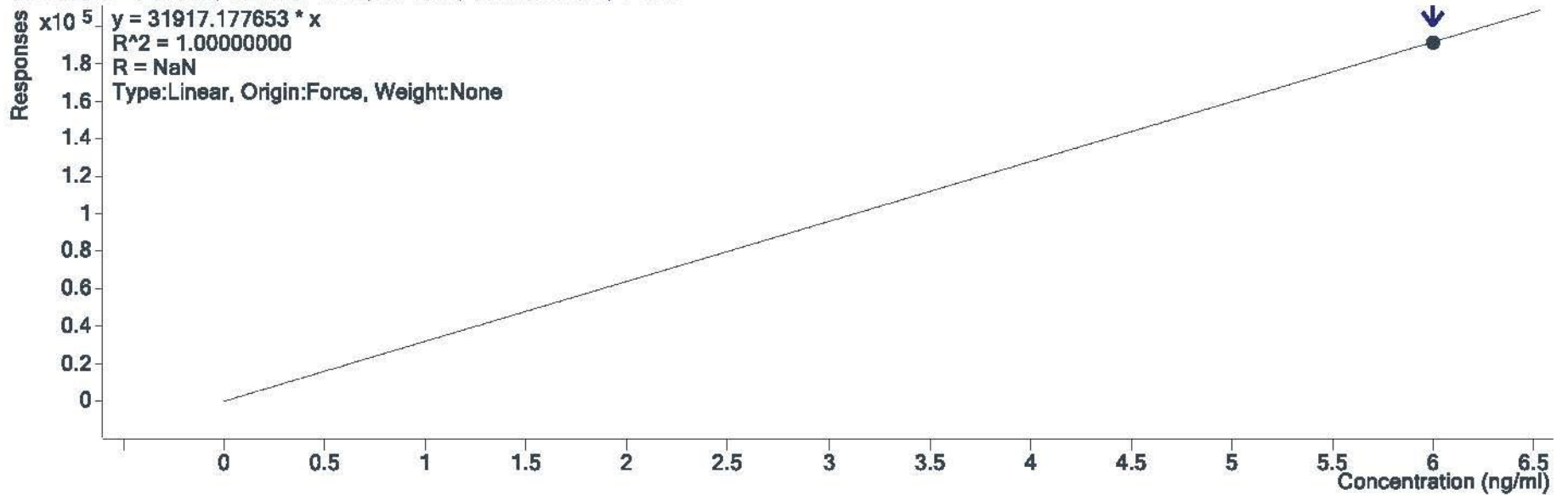


Şekil 3: Ekstrakt kromatogramları (Benzen,tolune,ethylbenzene,m-p-o-xlene 6 ppm) Kromatogramları

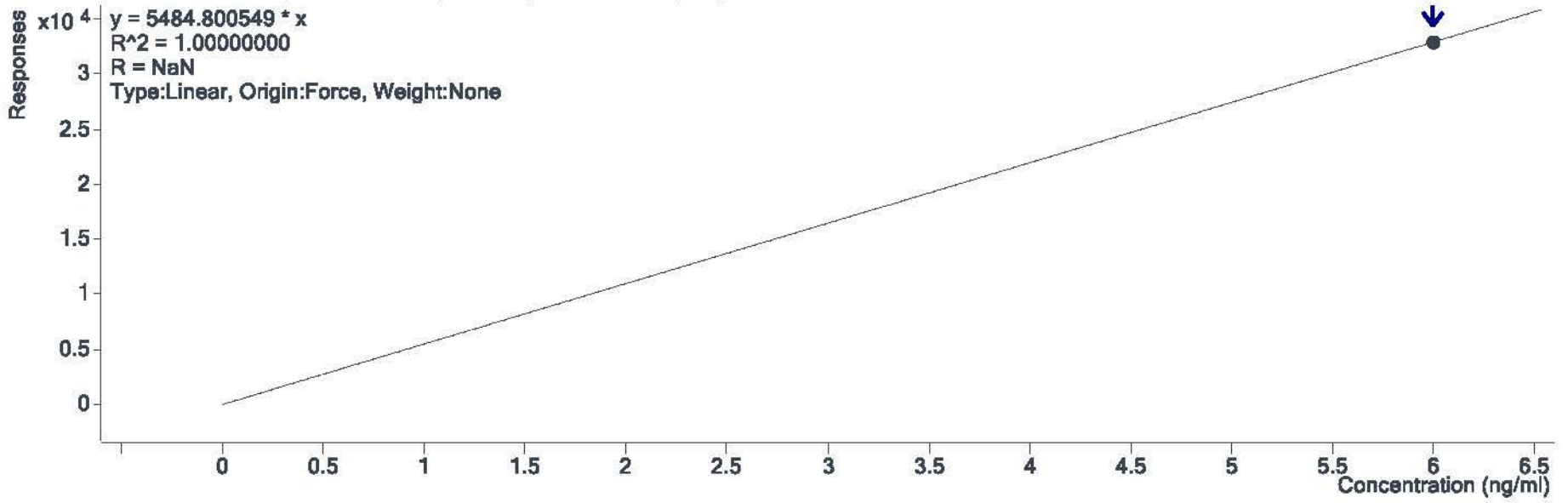
BENZENE - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 0 QCs



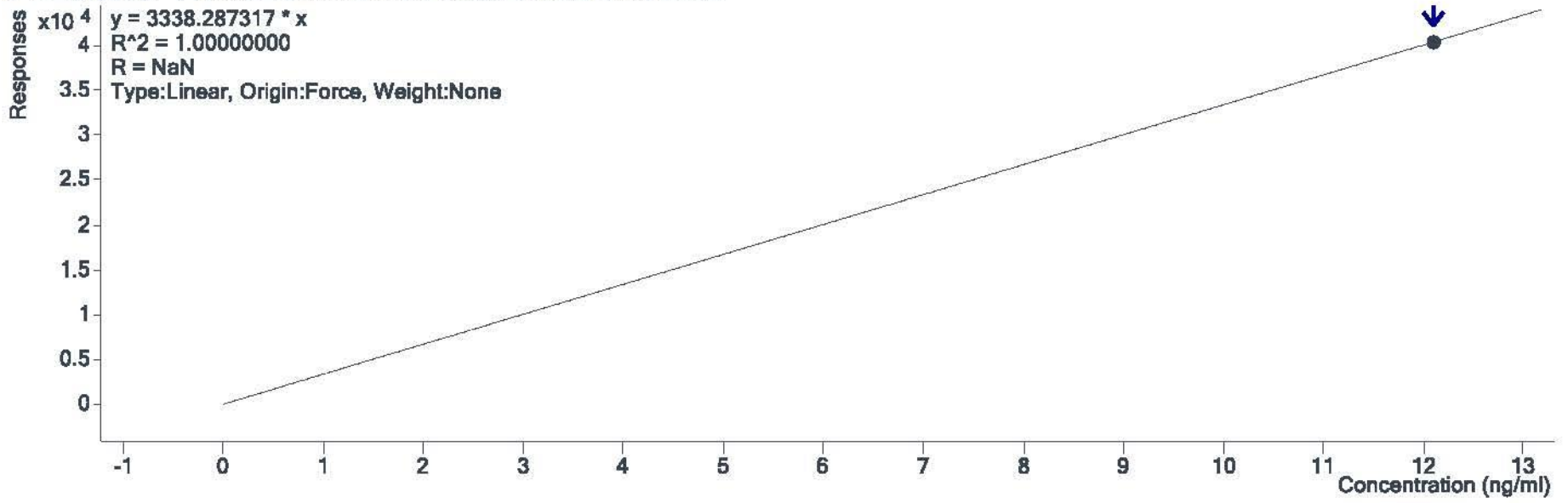
TOLUENE - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 0 QCs



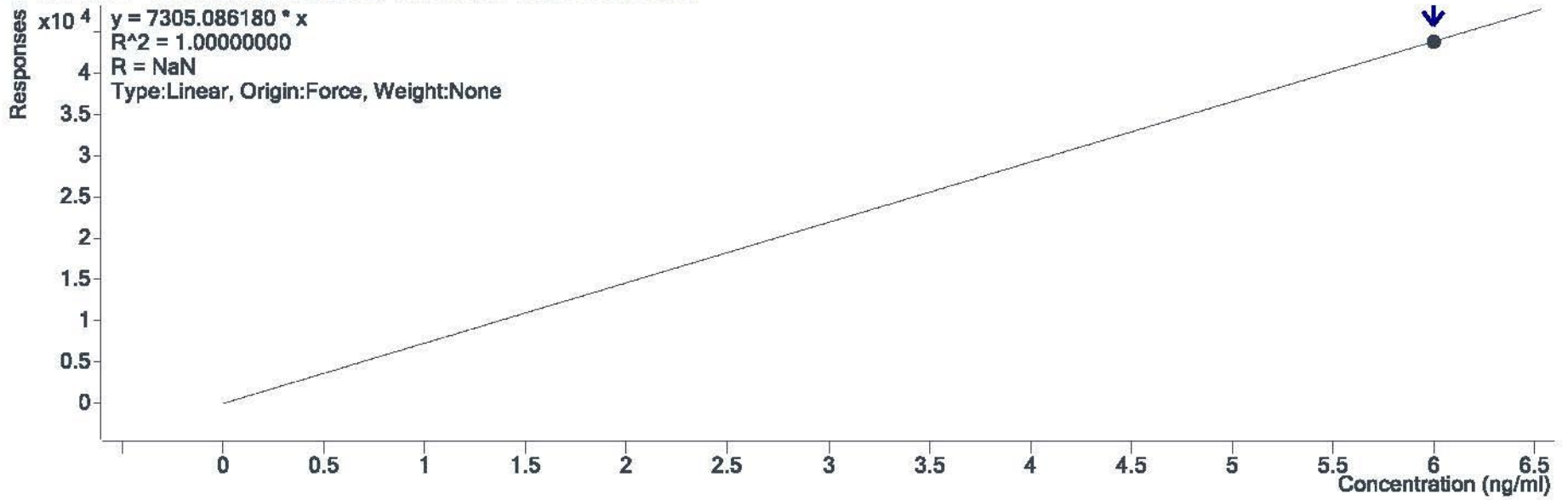
ETHYLBENZENE - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 0 QCs



P+M- XYLENE - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 0 QCs



O- XYLENE - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 0 QCs



Şekil 4: Kalibrasyon Grafikleri