

## Underivatized MMA and Succinic Acid in Human Urine on Gemini C18, 3u, 100x3 mm

**Column:** Gemini® 3 µm C18 110 Å, LC Column 100 x 3 mm, Ea  
**Dimensions:** 100 x 3 mm ID  
**Order No:** 00D-4439-Y0  
**Elution Type:** Gradient  
**Eluent A:** 0.1% Formic Acid in DI H2O  
**Eluent B:** 0.1% Formic Acid + 10 mM Ammonium Formate in MeOH

Gradient Profile:	Step No.	Time (min)	Pct A	Pct B
	1	0	85	15
	2	1.5	5	95
	3	2.5	5	95
	4	2.51	85	15
	5	4.5	85	15

**Flow Rate:** 700 µL/min

**Col. Temp.:** 40 °C

**Detection:** Tandem Mass Spec (MS-MS) @ (ambient)

**Detector Info:** <a target="\_blank"

href="https://sciex.com/products/mass-spectrometers?utm\_campaign=2019%20application%20search&utm\_source=phenomenex&utm\_medium=referral">SCIEX<

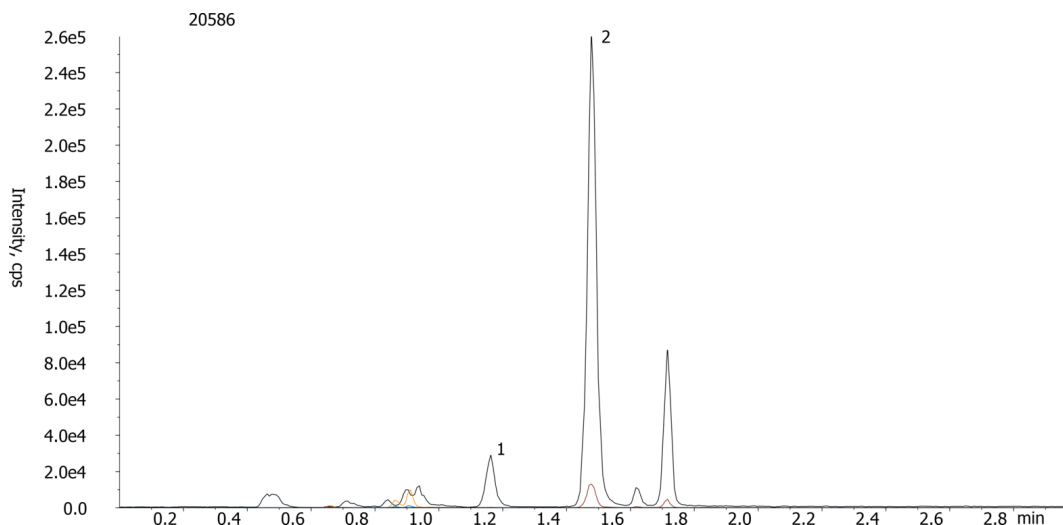
**Analyst Note:**

- SecurityGuard Cartridges, Gemini C18 4 x 2.0mm ID, 10/Pk Part No.: AJ0-7596

- Holder Part No.: KJ0-4282



Products used in this application:



### ANALYTES:

**1** Succinic acid

Retention Time: 1.16 min

**2** Methylmalonic acid

Retention Time: 1.48 min



# Sample Preparation Details

for HPLC Application ID No.: 20586

## Underivatized MMA and Succinic Acid in Human Urine on Gemini C18, 3u, 100x3 mm

### PRODUCT DESCRIPTION:

Strata™-X-AW 33 µm Polymeric Weak Anion, 30 mg / 1 mL, Tubes , 100/Pk

Order No.: 8B-S038-TAK

### SOLID PHASE EXTRACTION (SPE) PROCEDURE:

**Note:** The solvent volumes shown below are for a 30 mg bed mass.

The solvent volumes will need to be adjusted for a smaller or larger bed mass.

#### Condition:

#### Load:

Into individually labeled 1.5 mL conical micro-centrifuge tubes combine 0.5 mL 25 mM Ammonium formate, 50 µL IS and 100 µL blank, standard, or sample

#### Wash:

#### Dry:

Dry under high vacuum for 5-10 min

#### Elute:

#### Final Prep and Analysis:

This method is for the analysis of underivatized MMA.

Inject: 10 µL on HPLC Tandem Mass Spec (MS-MS) @ (ambient)

ANALYTES:	Spiked Conc. (ng/mL)	Log P	pKa	% Rec	%RSC (n=0)
1 Succinic acid	0				
2 Methylnmalonic acid	0				

**Note:** This method is designed as a convenient starting point for further investigation and can be tailored to meet your extraction goals.  
Call your local Phenomenex Representative for assistance in method development and optimization techniques.

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For more information contact your Phenomenex Representative at [info@phenomenex.com](mailto:info@phenomenex.com)



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