

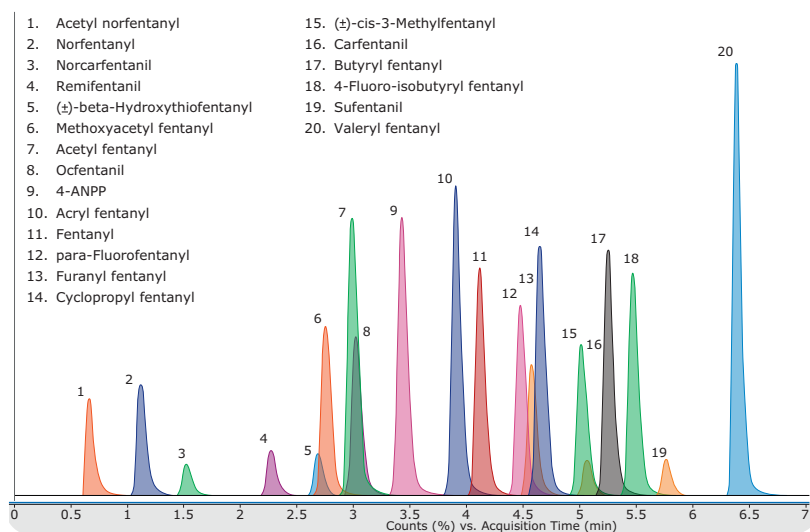
Fentanyl

The emergence of fentanyls as drugs of abuse represents the greatest challenge to current forensic toxicology. Recently, a huge number of new fentanyl structural variants, also known as designer fentanyls, have appeared on the illicit drug market. Often mixed with traditional opioid drugs, these highly potent fentanyl analogues have caused harmful intoxications and dramatically increased opioid related mortality in the United States, Europe and Asia. Due to the very high potency of some fentanyl analogues, forensic testing labs are facing the challenge of detecting minimal trace amounts of drug in biological samples while ensuring laboratory safety.

To help address these safety challenges, we provide Certified Spiking Solutions® of the most potent fentanyl analogues, such as Carfentanyl, in an ampoule additionally protected in a "safety can", ensuring safe transport and handling in the lab. Since all fentanyls are classified as controlled substances, we offer Cerilliant® fentanyl reference standards as DEA-exempt solutions for added convenience.



LC/MS/MS Analysis of Fentanyl and Fentanyl Analogs



Column	Supelco Titan™ C18, 5 cm × 2.1 mm I.D., 1.9 µm particles (577122-U)	
Column temp.	40 °C	
Sample	1.0 ng/mL in 90:10 methanol:water	
Injection volume	1.0 µL	
Mobile phase A	0.1% formic acid in water	
Mobile phase B	0.1% formic acid in acetonitrile	
Flow rate	0.4 mL/min	
Gradient	Time (min)	%B
	0	15
	0.3	15
	5.5	30
	7.0	95
Instrument	Agilent 1290 Infinity II UHPLC	
	Agilent 6495 Triple Quad LC/MS	
MS/MS mode	MRM	
Ion mode	Positive	

Product	Description
M-194-0.5ML	(±)-cis-3-Methylfentanyl HCl, 100 µg/mL (as free base) in methanol
H-130-0.5ML	(±)-β-Hydroxythiofentanyl HCl, 100 µg/mL (as free base) in methanol
A-139-0.5ML	4-ANPP, 100 µg/mL in methanol
A-157-0.5ML	4-ANPP-D5, 100 µg/mL in methanol
F-050-0.5ML	4-Fluoroisobutyrylfentanyl, 100 µg/mL in methanol
A-109-1ML	Acetyl fentanyl, 1.0 mg/mL in methanol
A-129-1ML	Acetyl fentanyl, 50 µg/mL in methanol
A-110-1ML	Acetyl fentanyl-13C6, 100 µg/mL in methanol
A-130-1ML	Acetyl fentanyl-13C6, 50 µg/mL in methanol
A-115-1ML	Acetyl norfentanyl oxalate 1.0 mg/mL (as free base) in methanol
A-116-1ML	Acetyl norfentanyl-13C6 oxalate, 100 µg/mL (as free base) in methanol
A-140-0.5ML	Acryl fentanyl HCl, 100 µg/mL (as free base) in methanol
A-071-1ML	Alfentanil HCl, 1.0 mg/mL (as free base) in methanol
B-066-0.5ML	Butyryl fentanyl, 100 µg/mL in methanol
C-162-1EA	Carfentanil Oxalate, 100 µg/mL in methanol
C-163-1EA	Carfentanil-D5 Oxalate, 100 µg/mL (as free base) in methanol
C-177-0.5ML	Cyclopropyl fentanyl HCl, 100 µg/mL (as free base) in methanol
F-013-1ML	Fentanyl, 1.0 mg/mL in methanol
F-002-1ML	Fentanyl, 100 µg/mL in methanol
F-001-1ML	Fentanyl-D5, 100 µg/mL in methanol
F-046-0.5ML	Furanyl fentanyl HCl, 100 µg/mL (as free base) in methanol
F-053-0.5ML	Furanyl fentanyl-D5 HCl, 100 µg/mL (as free base) in methanol
I-038-0.5ML	Isobutyryl fentanyl HCl, 100 µg/mL (as free base) in methanol
M-200-0.5ML	Methoxyacetyl fentanyl HCl, 100 µg/mL (as free base) in methanol
N-114-1EA	Norcarfentanil Oxalate, 100 µg/mL (as free base) in methanol
N-031-1ML	Norfentanyl oxalate, 1.0 mg/mL (as free base) in methanol
N-055-1ML	Norfentanyl-D5 oxalate, 1.0 mg/mL (as free base) in methanol
N-030-1ML	Norfentanyl-D5 oxalate, 100 µg/mL (as free base) in methanol
O-047-0.5ML	Ocfentanil, 100 µg/mL in methanol
F-054-0.5ML	ortho-Fluorofentanyl HCl, 100 µg/mL (as free base) in methanol
F-048-0.5ML	para-Fluorobutyryl fentanyl (PFBF), 100 µg/mL in methanol
F-049-0.5ML	para-Fluorofentanyl, 100 µg/mL in methanol
R-026-1ML	Remifentanil acid, 100 µg/mL in acetonitrile
R-024-1ML	Remifentanil HCl, 100 µg/mL (as free base) in methanol
S-008-1ML	Sufentanil Citrate, 100 µg/mL (as free base) in methanol
S-018-1ML	Sufentanil-D5, 100 µg/mL in methanol
V-048-0.5ML	Valeryl fentanyl HCl, 100 µg/mL (as free base) in methanol
V-068-0.5ML	Valeryl fentanyl-D5 HCl, 100 µg/mL (as free base) in methanol

To place an order or receive technical assistance

Customer Service: [SigmaAldrich.com/customersupport](https://www.sigmaaldrich.com/customer-support)

Technical Service: [SigmaAldrich.com/techservice](https://www.sigmaaldrich.com/techservice)

To talk to a standards specialist: standards@sial.com

MilliporeSigma
400 Summit Drive
Burlington, MA 01803
[SigmaAldrich.com/standards](https://www.sigmaaldrich.com/standards)

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

MilliporeSigma, the vibrant M, Supelco, Cerilliant and Certified Spiking Solutions are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

© 2018 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

Lit. No. MS_FL2871EN Ver. 1.0 10/2018

