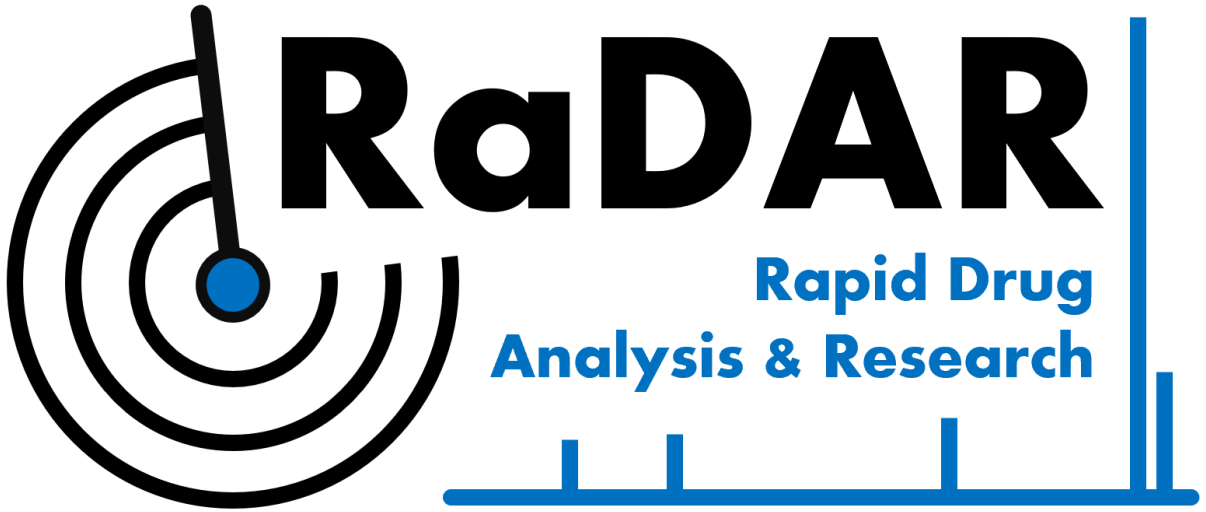

Supplemental Quantitative Analysis Training

Updated: November 2024

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U.S. DEPARTMENT OF COMMERCE

Quantitation Kits

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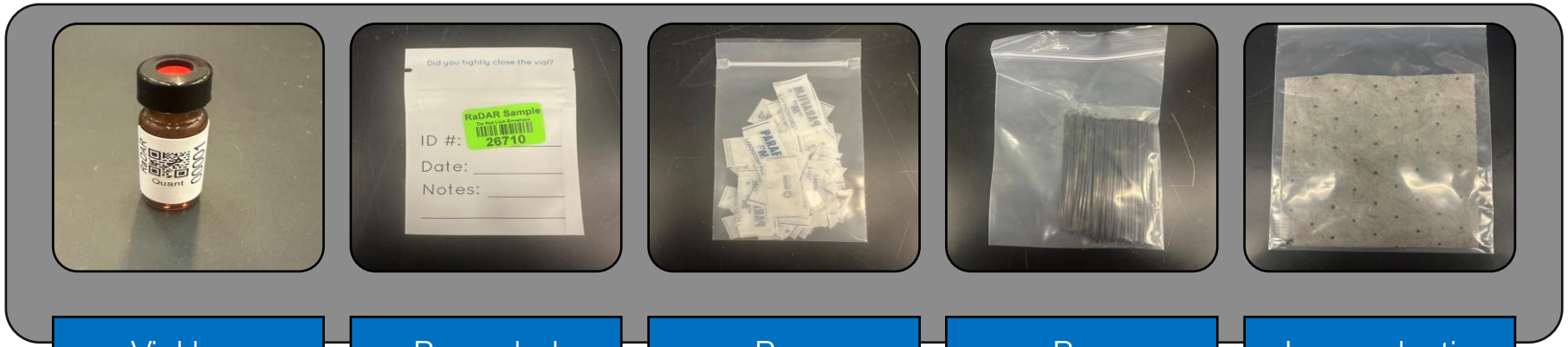
U.S. DEPARTMENT OF COMMERCE

RaDAR Rapid Drug Analysis & Research

Inside Each Kit



Vial box containing barcoded vials with solvent.	Barcoded plastic envelopes packaging vials.	Bag containing precut parafilm strips.	Bag containing ~5 mg microscoops.	Large plastic bags containing sorbent material for shipping.

White shipping boxes are also provided as a way to ship samples to NIST.

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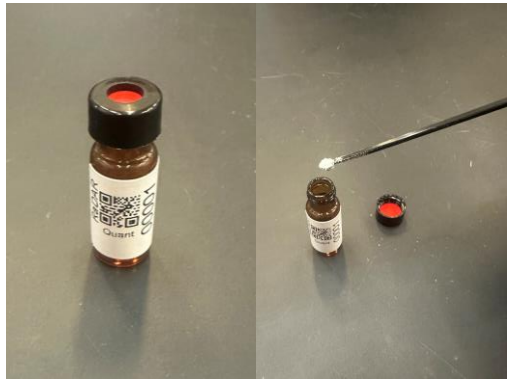
Sample Collection

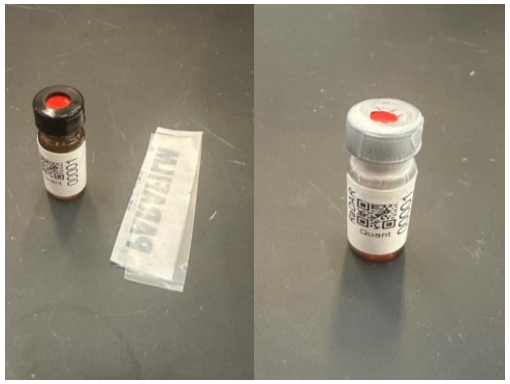
How to Sample:

1. Wear gloves to minimize cross-contamination and prevent exposure.
2. Using provided microscoop, transfer 1 or 2 scoops of material from original container into a barcoded vial. (A.)
3. Tightly cap the vial. Use a strip of precut parafilm to wrap around cap and top of vial. (B.)
4. Fill out the desired information on the plastic envelope with a corresponding barcode. Place the vial in the plastic envelope and zip the plastic enveloped closed. (C.)
5. Place multiple envelopes containing vials into one of the larger clear bags containing sorbent material. Ensure the large plastic bag is zipped closed. (D.)
6. Place the large plastic bag containing samples into a rigid box and ship to NIST for analysis.

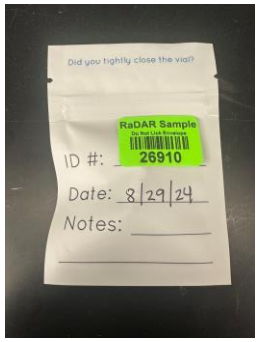
A.



B.



C.



D.

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Shipping Samples

- To ship, place large plastic bag containing samples into the provided white shipping boxes or another rigid box.
  - *Note: NIST does not provide mailing materials or cover shipping charges.*

- Please ship plastic vial box back to NIST once all vials are used.

- Mailing address:

  National Institute of Standards and Technology
  Edward Sisco, RaDAR
  100 Bureau Drive
  Building 217, Room B253
  Gaithersburg, MD 20899

DO NOT SEND:
Paraphernalia.
Anything with visible blood or bodily fluid.
Drug product NOT in a barcoded vial that has been capped, parafilmed, and stored in a plastic envelope.

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Sample Receipt & Analysis

- Intake
  - Information from envelope is recorded in database.
  - *Any personal identifiable information on envelope will not be recorded.*
- DART-MS Analysis
  - Qualitative analysis of sample completed using DART-MS.
  - *See RaDAR Qualitative Training.*
- Sample Preparation for Quantitation
  - Solvent evaporated from vial and vial is weighed to obtain weight of powder.
  - Sample diluted with methanol containing internal standard.
- LC-MS/MS Analysis
  - Sample analyzed by LC-MS/MS for a target compound panel.
  - Percent of total weight calculated for panel compounds.
- Reporting
  - Quantitative results are reported back within 1 to 2 weeks after sample receipt, using an Excel sheet.

Current Quant Panel:

- 4-ANPP
- BTMP
- Cocaine
- Fentanyl
- *p*-Fluorofentanyl
- Heroin
- Lidocaine
- Medetomidine
- Methamphetamine
- Phenethyl 4-ANPP
- Tetracaine
- Xylazine

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Reporting Results

Agency	NIST_ID	4-ANPP	BTMPS	Cocaine	Fentanyl	Fluorofentanyl	Heroin	Lidocaine	Medetomidine	Methamphetamine	Phenethyl 4-ANPP	Tetracaine	Xylazine
CA-PWL	10001	NA	NA	45.0	NA	NA	NA	NA	NA	NA	NA	15.3	NA
CA-PWL	10002	NA	NA	NA	NA	NA	NA	NA	NA	80.0	NA	NA	NA
CA-PWL	10003	NA	NA	NA	NA	NA	NA	NA	NA	85.4	NA	NA	NA
CA-PWL	10004	<LOQ	15.6	NA	5.2	NA	NA	NA	5.6	NA	<LOQ	NA	NA
CA-PWL	10005	NA	NA	NA	4.8	1.2	NA	NA	NA	NA	<LOQ	NA	NA
CA-PWL	10006	NA	NA	NA	NA	NA	40.0	NA	NA	NA	NA	NA	NA
CA-PWL	10007	NA	NA	36.4	NA	NA	NA	15.4	NA	NA	NA	11.2	NA
CA-PWL	10008	NA	NA	NA	NA	NA	NA	NA	NA	87.9	NA	NA	NA
CA-PWL	10009	NA	11.2	NA	10.3	NA	NA	NA	NA	NA	NA	NA	NA
CA-PWL	10010	1.2	NA	NA	4.5	2.3	NA	NA	NA	NA	<LOQ	NA	15.6

- Key points in Excel sheet:
  - Values reported are mass percent (The sample contains X% fentanyl).
  - Abbreviation "<LOQ" indicates compound was detected but the amount present was below limit of quantification.
    - Limit of quantitation is compound dependent.
    - The minimum mass percent detectable will be dependent on the amount of material received.
  - Abbreviation "NA" indicates compound was not detected (either it was not present of was below the limit of detection of the instrument).
  - Samples with new results will be highlighted in green.
- Note: the reported values are the free base form of the compound and do not include corrections for salt form.

RaDAR

Rapid Drug Analysis & Research

Please reach out with questions & suggestions!

RaDAR@nist.gov

RaDAR Page

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