

**NOTE:** Prepared reagents may be prepared in any amount provided that the component ratios are kept constant.

**1. 1.0 M Acetic Acid**

- a. Add 28.6 mL glacial acetic acid to 400 mL deionized water in a 500 mL volumetric flask.
- b. Mix and dilute to 500 mL with deionized water.
- c. Lot Number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months.
- e. Store at room temperature.
- f. QC Check: Tests acidic with litmus paper.

**2. 0.1 M Acetic Acid**

- a. Dilute 50 mL 1.0 M Acetic Acid to 500 mL with deionized water.
- b. Mix
- c. Lot Number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months.
- e. Store at room temperature.
- f. QC Check: Tests acidic with litmus paper.

**3. 0.1 M Phosphate Buffer**

- a. Dissolve 1.70 g anhydrous dibasic sodium phosphate ( $\text{Na}_2\text{HPO}_4$ ) and 12.14 g monobasic sodium phosphate monohydrate ( $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$ ) in 800 mL deionized water.
- b. Dilute to 1 L with deionized water and mix.
- c. Using a pH meter, adjust pH to 6.0 +/- 0.1 with monobasic sodium phosphate (lowers pH) or dibasic sodium phosphate (raises pH).
- d. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- e. Expiration: One month
- f. Refrigerate.
- g. QC Check: Record final pH.

**4. 0.1 M Sodium Phosphate Dibasic**

- a. Dissolve 2.84 g  $\text{Na}_2\text{HPO}_4$  in 160 mL of deionized water.
- b. Dilute to 200 mL with deionized water and mix.
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: One month
- e. Refrigerate.
- f. QC Check: N/A.

**5. 0.1 M Sodium Phosphate Monobasic**

- a. Dissolve 2.76 g  $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$  in 160 mL of deionized water.
- b. Dilute to 200 mL with deionized water and mix.
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: One month
- e. Refrigerate.
- f. QC Check: N/A.

**6. 0.1 N Sodium Hydroxide (NaOH)**

- a. Dissolve 4.00 g of sodium hydroxide in 80 mL of deionized water in a 100 mL volumetric flask.
- b. Mix and dilute to volume with deionized water.
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months.
- e. Store at room temperature.
- f. QC check: Tests basic with litmus paper.

**7. 0.5 M Phosphoric acid**

- a. Add 3.4 mL concentrated phosphoric acid to 80 mL deionized water in a 100 mL volumetric flask.
- b. Mix and dilute to volume with deionized water.
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months.
- e. Store at room temperature.
- f. QC check: Tests acidic with litmus paper.

**8. Base SPE Elution Solvent ( $\text{CH}_2\text{Cl}_2$  / IPA /  $\text{NH}_4\text{OH}$  (78:20:2))**

- a. To 20 mL of Isopropanol add 2 mL of concentrated Ammonium Hydroxide.
- b. Add 78 mL of Methylene chloride.
- c. Mix
- d. Expiration: This reagent is to be prepared daily prior to use.
- e. Store at room temperature in glass or fluoropolymer plastic.
- f. QC check: N/A

**9. Acid SPE Elution Solvent (Hexane/Ethyl Acetate 50/50)**

- a. Add 250 mL of Hexane to 250 mL of Ethyl Acetate.
- b. Mix
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months
- e. Store at room temperature
- f. QC check: N/A

#### 10. 2% HCl in Methanol

- a. Mix 10 mL of methanol and 200  $\mu$ L of concentrated hydrochloric acid.
- b. This reagent is to be prepared daily prior to use.
- c. QC Check: Tests acidic with litmus paper
- d. Dispose of any unused portion as approved in the State Crime Laboratory Safety Manual.

#### 11. Ammonium Chloride Buffer pH 9.0

- a. Dissolve 35.7 grams of ammonium chloride in 100 mL deionized water in a beaker. Wait until fully dissolved, which may take an hour or more.
- b. Add 7 mL of concentrated ammonium hydroxide.
- c. Slowly add additional concentrated ammonium hydroxide until the pH reaches 9.0.
- d. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- e. Expiration: Six Months
- f. Storage: Room Temperature
- g. QC Check: Record final pH.

#### 12. 0.5 N Sulfuric Acid

- a. Add 500 mL of deionized water to a glass bottle.
- b. Slowly add 7.0 mL of concentrated sulfuric acid.
- c. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: One year.
- e. Store at room temperature
- f. QC Check: Tests acidic with litmus paper.

#### 13. LCMSMS Mobile Phase A- 5mM Ammonium Formate with 0.1 % Formic Acid

- a. Combine 315 mg of ammonium formate and 1 mL of formic acid in HPLC grade water in a 1 L volumetric flask and qs to volume with HPLC grade water.
- b. Lot number: "MP-A1-" + Eight digit format year/month/day
  - i. Example: MP-A1-20140123
- c. Expiration: One month
- d. Storage: Room Temperature
- e. QC check: n/a

#### 14. LCMSMS Mobile Phase B- Acetonitrile with 0.1 % Formic Acid (Also used as Strong Wash)

- a. Combine acetonitrile and 1 mL of formic acid in a 1 L volumetric flask and qs to volume with acetonitrile.
- b. Lot number: "MP-B1-" + Eight digit format year/month/day
  - i. Example: MP-B1-20140123
- c. Expiration: One month
- d. Storage: Room Temperature
- e. QC check: n/a

### 15. 10 % Acetic Acid

- a. Add 50 mL of glacial acetic acid to 450 mL of deionized water.
- b. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- c. Expiration: One year
- d. Storage: Room Temperature
- e. QC check: Tests acidic with litmus paper

### 16. 9:1 Hexane: Ethyl Acetate

- a. Combine 900 mL of hexane with 100 mL of ethyl acetate.
- b. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- c. Expiration: One year
- d. Storage: Room Temperature
- e. QC check: n/a

### 17. Weak Wash

- a. Combine 100 mL of acetonitrile and 1 mL of formic acid in HPLC water in a 1 L bottle and add HPLC water in a quantity sufficient (qs) to bring to volume.
- b. Lot number: "WW-" + Eight digit format year/month/day
  - i. Example: WW-20140123
- c. Expiration: One month
- d. Storage: Room Temperature
- e. QC check: n/a

### 18. Seal Wash

- a. Combine 50 mL of acetonitrile and HPLC water in a 500 mL bottle and qs to volume with HPLC water.
- b. Lot number: "SW-" + Eight digit format year/month/day
  - i. Example: SW-20140123
- c. Expiration: One month
- d. Storage: Room Temperature
- e. QC check: n/a

### 19. Loop Wash

- a. Combine 350 mL of acetonitrile and HPLC water in a 500mL bottle and qs to volume with HPLC water.
- b. Lot number: "LW-" + Eight digit format year/month/day
  - i. Example: LW-20140123
- c. Expiration: One year
- d. Storage: Room Temperature
- e. QC check: n/a

## **20. 1.0 N Hydrochloric Acid**

- a. Add 83 mL concentrated hydrochloric acid to 800 mL deionized water in a 1 L volumetric flask.
- b. Mix and dilute to 1 L with deionized water.
- c. Lot Number: Eight digit format year/month/day
  - i. Example: 20101231
- d. Expiration: Six months.
- e. Store at room temperature.
- f. QC Check: Tests acidic with litmus paper.

## **21. 50:50 Water: Acetonitrile**

- a. Combine 500 mL of HPLC water with 500 mL of acetonitrile in a 1L bottle.
- b. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- c. Expiration: Six months
- d. Storage: Room Temperature
- e. QC check: n/a

## **22. 50:50 Methanol: Acetonitrile**

- a. Combine 500 mL of methanol with 500 mL of acetonitrile in a 1L bottle.
- b. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- c. Expiration: Six months
- d. Storage: Freezer
- e. QC check: n/a

## **23. 80:20 Water: Methanol**

- a. Combine 800 mL of water with 200 mL of methanol in a 1L bottle.
- b. Lot number: Eight digit format year/month/day
  - i. Example: 20101231
- c. Expiration: Six months
- d. Storage: Room Temperature
- e. QC check: n/a

## **24. QTOF Mobile Phase A- 10mM Ammonium Formate with Water**

- a. Combine 630 mg of ammonium formate with LCMS grade water in a 1L bottle and qs to volume.
- b. Lot number: "MP-A1-" + Eight digit format year/month/day
  - i. Example: MP-A1-20140123
- c. Made daily prior to use
- d. Storage: Room Temperature
- e. QC check: n/a

## **25. QTOF Mobile Phase B- Methanol with 0.05 % Formic Acid**

- a. Combine methanol and 0.25 mL of formic acid in a 500mL bottle and qs to volume with methanol.

- b. Lot number: "MP-B1-" + Eight digit format year/month/day
  - i. Example: MP-B1-20140123
- c. Made daily prior to use
- d. Storage: Room Temperature
- e. QC check: n/a

## 26. Needle Wash

- a. Combine 200 mL of methanol, 200mL of acetonitrile, and 600mL of isopropanol in a 1L bottle.
- b. Lot number: "NW-" + Eight digit format year/month/day
  - i. Example: NW-20140123
- c. Expiration: One month
- d. Storage: Room Temperature
- e. QC check: n/a

## 27. 0.1% Ammonium Hydroxide

- a. Mix 10 mL of water and 10  $\mu$ L of ammonium hydroxide.
- b. Made daily prior to use.
- c. QC check: n/a
- d. Dispose of any unused portion as approved in the State Crime Laboratory Safety Manual.