

**DNA Evidence Processing****I. Batch Setup – Fired Cartridge Casings**

1. Forensic Biology will import FCC swabbings in STACS (see STACS SOP-2 Forensic Biology).
2. Create a lysis worksheet: Open **Processing** → **DNA Processing** → **Batch Setup**. Click **Create**.
3. Select the appropriate extraction under **Batch Type** (Fired Cartridge Casings), the corresponding **Evidence Classification** (Question), and the **Fill Order** (Horizontal).

	1	2	3	4	5	6	7	8	9	10	11	12
A	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA
B	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	DNA	BIS	Blank

4. Click **Create**. A unique barcode associated with the extraction will be generated and printed. Moving forward, this barcode may be used to transfer the samples as a whole set.
5. Scan the extraction barcode to begin sample allocation. Or double click the batch in the upper window.
6. Select samples to be extracted from the available samples window on the left.
7. To add the BIS to the worksheet, select the designated BIS well and scan the barcode label on the EP1 tube.
8. If more samples need to be added, click Save.
9. If no changes/additions are needed, click **Complete** in the **Batch Setup** window.
10. By completing the batch, a **Blank** sample will automatically be generated. In the pop-up window, click Save. The barcode will automatically print. FCC case number, initials and date can be used for blank lot.

**II. Extraction/Isolation – Fired Cartridge Casings**

Extraction (steps #1-8) refers to sample lysis. Isolation (steps #7-21) encompasses instrument purification.

1. Open **Processing** → **DNA Processing** → **Extraction**.

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2. Select the batch to be processed from the worklist and click **Select Scenario**. Fired Cartridge Casings (Rine & Swab; Lysis) will automatically be selected for FCC processing.

Scenario Details : 2	
Property	Value
Scenario Name	Fired Cartridge Casings (Rinse & Swab; Lysis)
Instrument Model	Manual

3. Scan extraction barcode.
4. FCC consumables are split into 2 groups. Highlight the **Rine and Swab** group. Scan the consumable barcodes for G2 Buffer and BTmix only. The Consumable window will display the reagent volumes required for the lysis.

Consumables : 2							
Group Type	Group Name	Extra	Extra Number				
All	Rinse and swab	No Extra					
Optional	Fixed	Consumable Name 1	Format 1	Bar Code 1	Reagent Amount	Measurement	Kit
<input type="checkbox"/>	<input checked="" type="checkbox"/>	EZ1 Buffer G2	EF#####	EF000002	300.00	ul	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	BTmix	GS#####	GS000001	30.00	ul	

5. Click **Start Process**.
6. Complete the tube check by scanning the tube labels. Click ok.
7. Store sample tube(s), BIS and Blank in the refrigerator Pending Non-SA Rack. In **Storage Subsystem (Utilities → Storage → Storage Subsystem)**, select the **Store** tab, scan the appropriate storage unit bar code and item bar code(s). Select **Save**.
8. To discard empty bottles/tubes of G2 buffer/BTmix go to **Storage Subsystem (Utilities → Storage → Storage Subsystem)**, select the **Discard** tab, under Discard Reason select Consumed and scan the reagent bar code. Click Save.
9. **The DNA processor will then take over from this point on.**
  - In STACS, assign the appropriate samples to the processing DNA examiner. This can be done in **Processing → Receipt → Sample Setup**. Under the **Sample Status** dropdown, select **Processing**. Select the appropriate samples and choose **Assign**. The Reporting Analyst may be selected at this time, if known.
  - Take custody of the sample tube(s) to be processed. In **Storage Subsystem (Utilities → Storage → Storage Subsystem)**, select the **Retrieve** tab, scan the item bar code(s) to be put into your custody. Select **Save**.
10. Open **Processing → DNA Processing → Extraction**. Select the batch to continue processing from the worklist and click **Load Scenario**.

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11. Highlight the **Lysis** group. Scan the consumable barcodes for EZ1 Pro K and EZ1 cRNA only. The Consumable window will display the reagent volumes required for the lysis.

Group Type	Group Name	Extra	Extra Number
Non-Sperm	Lysis	No Extra	

Optional	Fixed	Consumable Name 1	Format 1	Bar Code 1	Reagent Amount	Measurement	Kit
<input type="checkbox"/>	<input checked="" type="checkbox"/>	EZ1 pro K	PR#####		10.00	ul	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	EZ1 cRNA	RN#####		1.00	ul	

12. While incubating, elution tube barcode labels can be printed from the **Print Labels** button.
13. When lysis is complete, click **Complete Process** and record the results using the Complete Batch Activity screen.
- **Process Successful:** the batch advances to the next processing step.
  - **Process Aborted:** the batch remains on the Extraction Batches worklist. A **Batch Comment** is required with this option.
  - **Process Failed:** the batch is abandoned and all samples return to Batch Setup. A batch comment is required with this option.
14. Click **Save**.
15. Create an Isolation (purification) worksheet: Open **Processing** → **DNA Processing** → **Isolation**.
16. Click **Create Batch**.
17. Click the **Create** button under the New Batches worklist.
18. Select a **Batch Type (EZ2 Trace – Hair/FCCs)** and click **Create** to create the unique barcode associated with the isolation.

Create Batch

Batch Type	Kit	Fill Order	Batch Bar Code
EZ2 Trace - Hair/FCCs	Not Defined	Horizontal	Create

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
A	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)	(DNA)

19. Scan the newly created barcode into the **Destination Batch** section.
20. Scan the extraction barcode into the **Source Batch** section. Click **Allocate** to add the lysed samples to the isolation worksheet. If sample(s) need to be moved, this can be done after the allocation is saved, followed by dragging the sample(s) as needed.

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**New Batches : 11**

Bar Code	Batch Type	Kit
BTM-250815-11	Bone and Teeth Microcon	Not Defined
E2H-250919-02	EZ2 Trace - Hair/FCCs	Not Defined
EZ2-250718-03	EZ1/2 Purification	Not Defined
EZ2-250804-22	EZ1/2 Purification	Not Defined
EZ2-250804-23	EZ1/2 Purification	Not Defined
EZ2-250804-24	EZ1/2 Purification	Not Defined
EZ2-250804-25	EZ1/2 Purification	Not Defined
EZ2-250804-26	EZ1/2 Purification	Not Defined
EZ2-250804-27	EZ1/2 Purification	Not Defined
EZ2-250804-29	EZ1/2 Purification	Not Defined

Source Batch  
FCX-250919-01

**Available Batches : 2**

Bar Code	Batch Type	Kit
FCX-250919-01	Fired Cartridge Casings	Not Defi

Sample Bar Code      Kit

**Samples For Batch 'FCX-250919-01' : 3** ☐ Filter Blanks

Action	Well	Bar Code	Lab Case Number	Exhibit Number	Lo
Not Defined	A01	SP022	TST FCC 090925-1	1-1	
Not Defined	A02	BI000224			EP
Not Defined	A03	250266			SM

21. Once finished, click **Complete** (at the top of the screen next to Destination Batch).
22. Under **Isolation**, in the Batches Worklist window, select the appropriate batch and click **Select Scenario** (EZ1/2 Trace – Hair/FCCs).

**Scenario Details : 3**

Property	Value
Scenario Name	EZ1/2 Trace - Hair/FCCs
Instrument Model	Manual
Default Final Volume	30

23. Scan the batch barcode and all necessary consumables and instrumentation.
24. Click **Start Process**.
25. Complete the tube check by scanning the lysis tube barcode labels followed by elution tube labels.
26. Once the isolation is complete, click **Complete Process** and select the appropriate option.
  - Adjust the elution volumes if needed.
  - **Process Successful:** the batch advances to the next processing step.

- **Process Aborted:** the batch remains on the Isolation worklist. A **Batch Comment** is required with this option.
  - **Process Failed:** the batch is assigned a **Status** of 'Abandoned' and its samples are returned to Isolation Batch Create to be allocated to a new batch. A **Batch Comment** is required with this option. Only use if machine crashes or something that affects all samples.
27. If an elution volume discrepancy results in a manual volume check, this will be captured in the **Complete Process** window. Enter each sample's elution volume as measured off the instrument and select **Process Successful**. See comment in Diff section.

Proceed to the **Batch Management** module to document subsequent adjustments. Scan the extraction batch or locate using the **Quantitation Batch Create** option in the **Processing Step** dropdown.

- If an elution volume is significantly increased ( $>40\mu\text{L}$ ), select the sample(s) and control(s) and proceed to the **Concentrate** tab.
- If an elution volume is significantly reduced ( $0\text{--}20\mu\text{L}$ ), select the sample(s) and control(s) and click on the **Rework** tab. Select **Isolation Batch Create** in the **Rework Entry Point** dropdown and document the **Rework Reason**. Click **Save**. The sample(s)/control(s) can now be added to a new isolation batch.
- If an eluate needs a volume adjustment, this can be done through the **Dilute** tab.

### III. Purification

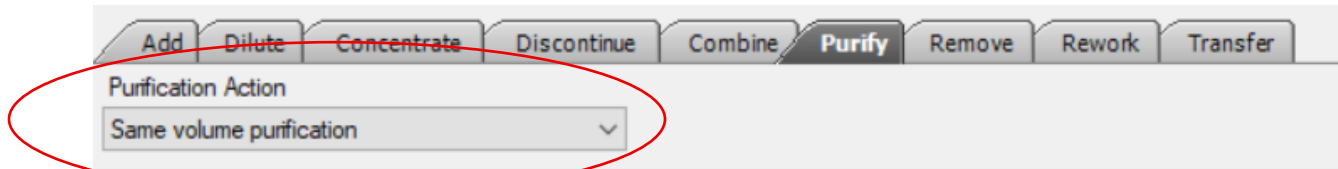
1. The post-EZ2 purification required for FCCs will be completed in the Batch Management module.
2. In Batch Management, under the Processing Step drop down, select 'Quantitation Batch Create'.

Processing Step  
Quantitation Batch Create

Batches : 1

Concentrate	Custodian/Location	Bar Code	Kit	Proc
<input type="checkbox"/>	Stephanie Lopez	E2H-250919-02	Not Defined	Manu

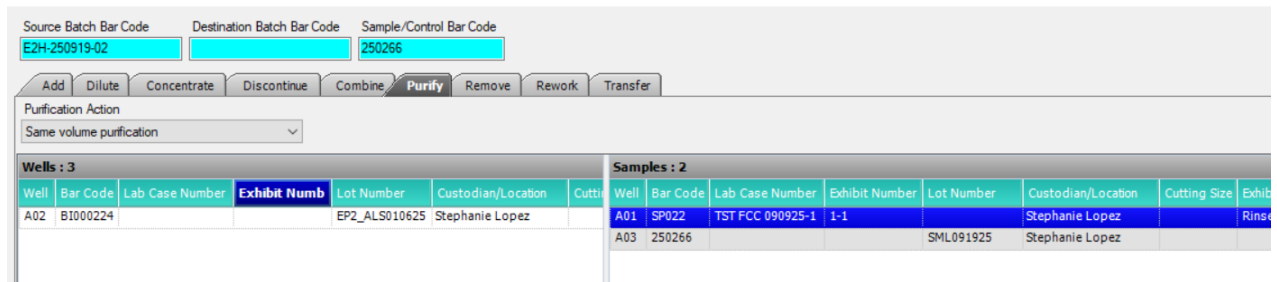
3. Select the Purify tab. Under Purification Action, select Same volume purification.

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Purification Action

Same volume purification

- Select/scan the Source Batch. Select/scan the appropriate samples along with reagent blank(s). Once selected/scanned, the samples will move from the left hand side of the screen to the right hand side of the screen.



Source Batch Bar Code: EZH-250919-02

Destination Batch Bar Code:

Sample/Control Bar Code: 250266

Purification Action: Same volume purification

Well	Bar Code	Lab Case Number	Exhibit Number	Lot Number	Custodian/Location	Cutting Size
A02	B1000224			EP2_ALS010625	Stephanie Lopez	

Well	Bar Code	Lab Case Number	Exhibit Number	Lot Number	Custodian/Location	Cutting Size
A01	SP022	TST FCC 090925-1	1-1		Stephanie Lopez	
A03	250266			SML091925	Stephanie Lopez	

- Scan the required consumables. Click save.



Optional	Consumable Name	Format	Bar Code
<input type="checkbox"/>	dH20	WA#####	
<input type="checkbox"/>	Microcon	MC#####	

- Once purification is complete, the samples can proceed with **Quantitation Setup**.