ExoQuick-TC® ULTRA EV Isolation Kit for Tissue Culture Media

Cat # EQUltra-20TC-1

User Manual

Storage: Please see individual components

A limited-use label license covers this product. By use of this product, you accept the terms and conditions outlined in the License and Warranty Statement contained in this user manual.
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**Product Description**

Isolation of extracellular vesicles (EVs) from biofluids such as tissue culture media has been a challenging and sometimes frustrating roadblock to getting to what matters the most – understanding the biology of EVs. The presence of carryover molecules (e.g. proteins) in these biofluids often masks what we are able to detect and becomes a formidable challenge to successful outcomes. Currently available methods to isolate EVs face formidable trade-offs in terms of yield, ease of use, purity, and price – a practical challenge in itself to researchers who care about getting to the “what” as opposed to the “how”.

To address these issues, SBI is proud to introduce ExoQuick-TC® ULTRA EV Isolation Kit for Tissue Culture Media (Cat #EQUltra-20TC-1) – an innovative kit drawing upon our expertise in the exosome isolation space. It is the first-in-class kit designed to avoid the trade-offs faced with other EV isolation methods. Now researchers have the power to singularly focus on the challenges of EV biology without worrying about bottlenecks of EV isolation.

The kits come with SBI’s proven ExoQuick-TC® EV isolation reagent as well as our convenient, pre-packed bipartate resin columns good for 20 reactions*. Start from 5ml of tissue culture media and in less than 20 min of total hands-on time, researchers have high-quality EVs for downstream applications such as western blotting, mass spectrometry, NGS sequencing, exosome labeling, and in vivo/ex vivo exosome delivery.

*Tissue Culture Media: 1 reaction is defined as 5 ml of tissue culture media precipitated using ExoQuick-TC

**List of Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Qty/Volume</th>
<th>Storage Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ExoQuick-TC</td>
<td>20 ml</td>
<td>RT</td>
</tr>
<tr>
<td>Purification column</td>
<td>20 columns</td>
<td>4°C</td>
</tr>
<tr>
<td>Collection tubes</td>
<td>20 tubes</td>
<td>RT</td>
</tr>
<tr>
<td>2 ml Eppendorf tubes</td>
<td>20 tubes</td>
<td>RT</td>
</tr>
<tr>
<td>Buffer A</td>
<td>5 ml</td>
<td>4°C</td>
</tr>
<tr>
<td>Buffer B</td>
<td>30 ml</td>
<td>4°C</td>
</tr>
</tbody>
</table>

**Storage**

The Kit is shipped on blue Ice and the components should be stored at recommended temperatures as stated above. Properly stored kits are stable for 12 months from the date received.
**Protocol**

**A. ExoQuick-TC Isolation**

1. Collect the biofluid and centrifuge at 3,000 × g for 15 minutes to remove cellular debris.

2. Transfer the supernatant to a new tube.

   ! **OPTIONAL:** If additional debris remains detectable, centrifuge the supernatant for additional 10 minutes at 12,000 × g and transfer the supernatant to a new tube.

3. Add the appropriate volume of ExoQuick-TC to the clarified biofluid as shown in the table.

<table>
<thead>
<tr>
<th>Biofluid</th>
<th>Sample Volume</th>
<th>ExoQuick-TC Volume</th>
<th>Incubation Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue Culture Media</td>
<td>5 ml</td>
<td>1 ml</td>
<td>12hr to O/N at 4°C</td>
</tr>
</tbody>
</table>

4. Mix well by inverting or flicking the tube, and incubate on ice for O/N (or at least 12hrs) at 4°C. The tubes do not need to be rotated during the incubation period.

5. Centrifuge the ExoQuick-TC/biofluid mixture at 3,000 × g for 10 minutes. Centrifugation may be performed at either room temperature or 4°C with similar results. After centrifugation, the EVs may appear as a beige or white pellet at the bottom of the tube.

6. Carefully aspirate off the supernatant. Spin down any residual ExoQuick solution and remove all traces of fluid by aspiration, taking great care not to disturb the precipitated EVs in the pellet.

7. Resuspend the pellet in 200 µl of Buffer B.

8. Measure and record sample protein concentration.

**B. Purification of Isolated EVs**

1. Add 200 µl of Buffer A to resuspended EVs

2. Take out Purification column, loosen screw cap and snap off the bottom closure. Place the column into a collection tube.

   ! **NOTE:** Save the bottom closure for steps 7-9.

3. Centrifuge at 1,000 x g for 30 seconds to remove the storage buffer.

4. Discard the flow-through and place the column back into the collection tube.
5. To wash the column, remove the cap and apply 500 µl of Buffer B on top of the resin and centrifuge at 1,000 x g for 30 seconds. Discard the flow through.

! **NOTE: Save the cap for steps 7-9.**

6. Repeat steps 4 – 5 one more time to wash the column.

7. Plug the bottom of the column with the bottom closure. Apply 100 µl of Buffer B on top of the resin to prep it for sample loading.

8. Add the entire content from step 1 (or up to volume equivalent of 4 mg of total protein) to the resin. Place the screw cap on the top of the column.

9. Mix at room temperature (RT) on a rotating shaker for 5 minutes.

**C. Sample Elution**

! **CAUTION: Sample will start to elute as soon as the bottom closure is removed. Please make sure 2 ml Eppendorf tubes are ready to receive eluate to minimize sample loss.**

1. Loosen the screw cap and remove the bottom closure, and immediately transfer to 2 ml Eppendorf tube.

2. Centrifuge at 1,000 x g for 30 seconds to obtain purified EVs.

3. Discard the column.
Example Data and Applications

The ExoQuick-TC ULTRA Workflow

1. Add ExoQuick-TC ULTRA to 5 mL of tissue culture media or other biofluid and incubate overnight at 4°C
2. Spin 3,000g x 10 min
3. Resuspended EVs and add to pre-washed ExoQuick ULTRA columns
4. Spin 1,000g x 30 sec and collect EVs

Figure 1. Workflow for ExoQuick-TC® ULTRA EV Isolation Kit. Highly purified EVs from 5 ml of tissue culture media can be obtained in less than 20 minutes of hands-on time.

Figure 2. ExoQuick-TC ULTRA delivers higher yields and purity than competing EV isolation methods. Western blotting shows ExoQuick-TC ULTRA prep contains the highest levels of exosome-specific marker CD63, and lowest levels of bovine albumin (present in serum and additives to media). Each lane was loaded with 4 μg of total protein as measured using Qubit fluorimetric protein assay.
**Technical Support**

For more information about SBI products and to download manuals in PDF format, please visit our web site: [http://www.systembio.com](http://www.systembio.com)

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**Licensing and Warranty Statement**

**Limited Use License**

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- The Product may not be resold, modified for resale, or used to manufacture commercial products without prior written consent of SBI.

- This Product should be used in accordance with the NIH guidelines developed for recombinant DNA and genetic research.

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