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Why is There a Hole in the Blue Valve?

There are several design modifications that have occurred in the RTube™ that are subtle and hard to identify. The most recent modification was the placement of a tiny hole in the center of the blue exhalation valve slit. This tiny hole was made as an improvement to the RTube and accomplished two roles. First, it helps the valve to open more easily with the first exhalation (after the first exhalation, the valve is always easy to open). Second is that it serves as a pressure relief for if the deeply frozen RTube (-20 or below) is thawed quickly. In the past, as is noted on our instructions and warnings, too rapid a thaw of an RTube that was capped on both ends could lead to the top popping off, and loss of sample occurring. This issue has been addressed with this small pressure relief hole, and new instructions to only cap the top of the RTube (the end to which the arrow points).

This small hole is really very tiny. As a general rule it will not allow sample to be extruded through it, for the surface tension of the EBC will prevent that. However, it is possible that a few microliters could be lost in rare situations. Please note that the small amount of fluid under the blue valve that is commonly seen after EBC collection does not mean that there is fluid leakage backwards through the valve. This is simply EBC that condensed below the valve.