

VQA HIV RNA Copy Control (200 copies/mL) Change in Control Range

The Virology Quality Assessment (VQA) Program has been asked by the AIDS Clinical Trials Networks (ACTN) to define and produce and HIV RNA Copy Control that would be used by virology laboratories: 1) to help validate the low-end performance of the new HIV RNA assay platforms [specifically the **Abbott RealTime HIV-1 Assay [AR]** and the **Roche COBAS AmpliPrep/COBAS TaqMan HIV-1 Test [RT]**]; and 2) to provide external validation of the run performance. To date, the VQA has received 758 results from 30 laboratories using the AR assay (manual and automated extractions data were combined) and 330 results from 37 laboratories using the RT assay (version 1 and 2 data were combined) for four different lots of controls. Initial data collections were made for informational purposes only. Starting in January 2011, the VQA began providing a range for each lot of control for use in validating AR and RT HIV RNA assay runs. The control ranges were established using VQA generated medians. Data from RT and AR assays were combined to generate a cross-platform range that applied to both kits. Using this strategy, post-hoc analysis of all the data showed that there were a total of 10 results obtained from six laboratories (5 AR and 1RT) for which the control result exceeded the target range and the run failed (or would have failed had the range been in place). This represents a 0.92% failure rate.

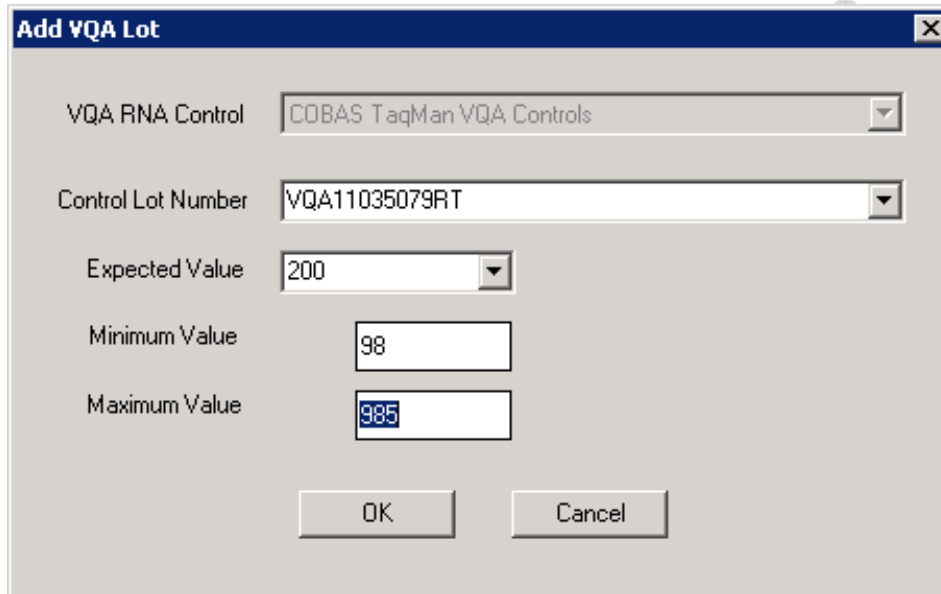
Closer inspection of the data also showed that the mean values for the 200 copies/mL control did differ between the AR and RT assays by 0.18 log₁₀ RNA copies/mL, with an AR mean of 203 (2.31) copies/mL and a RT mean of 311(2.49) copies/mL. These mean values were determined by combining all the historical data collected to date and fitting a comprehensive statistical model that simultaneously accounted for between-kit bias and between-lot variability. Data generated with RTv1 and RTv2 were combined to estimate the RT kit mean. Similarly, manual and automated extraction methods were combined to generate the AR kit mean.

Because of this difference in log₁₀ recovery between the two kits, it became apparent that the use of an overall mean of 251 (2.40) copies/mL might not be the best approach because a larger standard deviation (SD; 0.5985 vs. 0.5) would have to be utilized to accommodate this apparent systematic difference in recovery. The concern was that a larger SD would potentially mask problems with either assay and allow for increased variation in results. Therefore, the decision was made to use the kit-specific mean to establish the range and apply that value to all control lots. One range would be applied to the AR assay and one range would be applied to the RT assay. The range would include the kit-specific mean and a +/- 3SD range (1 SD = 0.167, 3 SD = 0.5).

All VQA 200 copies/ml RNA copy control lots must now use a range of 98-985 copies/mL for the RT assay, and 64-642 copies/mL for the AR assay. A new control range sheet will be provided by the VQA. The range will be unique to an assay but will stay consistent across lots of VQA controls. This new range will be applied to all new and existing lots in the field. The new range should be used immediately. The plan is to have all laboratories using the new control range starting 01 June 2011.

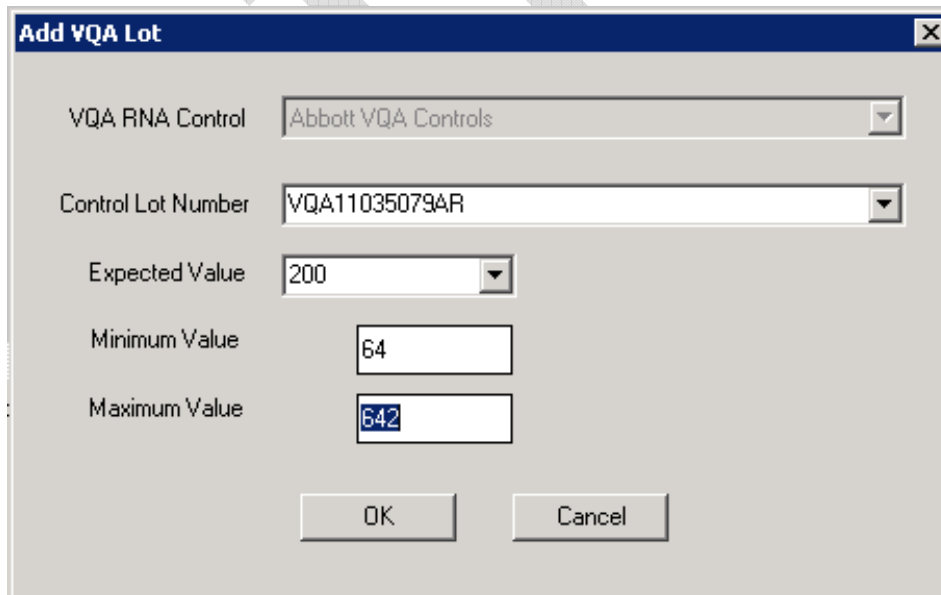
LDMS Instructions

If a laboratory is using the LDMS, they must log in a new name for their existing controls and apply the new range. They should use VQAnnnnnnnnAR or VQAnnnnnnnnRT for AR and RT Control Lot Numbers in LDMS, where nnnnnnnn represents the control's numeric lot number. For example, if the laboratory was using lot 11035079 with a previous range of 89-891 copies/mL, they would now call the control VQA11035079RT and apply a new range of 98-985 copies/mL (RT assay), or call the control VQA11035079AR and apply a range of 64-642 (AR assay).



The screenshot shows a dialog box titled "Add VQA Lot" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- VQA RNA Control: A dropdown menu with "COBAS TaqMan VQA Controls" selected.
- Control Lot Number: A dropdown menu with "VQA11035079RT" selected.
- Expected Value: A dropdown menu with "200" selected.
- Minimum Value: A text input field containing "98".
- Maximum Value: A text input field containing "985".
- Buttons: "OK" and "Cancel" buttons at the bottom.



The screenshot shows a dialog box titled "Add VQA Lot" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- VQA RNA Control: A dropdown menu with "Abbott VQA Controls" selected.
- Control Lot Number: A dropdown menu with "VQA11035079AR" selected.
- Expected Value: A dropdown menu with "200" selected.
- Minimum Value: A text input field containing "64".
- Maximum Value: A text input field containing "642".
- Buttons: "OK" and "Cancel" buttons at the bottom.

Please contact the VQA (vqa.dmq@fstrf.org) if you have any questions regarding the new control ranges for the VQA 200 copies/mL control.