

Conversion from copy/ul to copy/ml

Q. How to convert results of sample titration from copy/ul to copy/ml?

A. Quantitation standards are defined as copy/ul. To convert the results to copy/ml following equation must be used.

$$\text{Result (copy/ml)} = \frac{\text{Result(copy/}\mu\text{l)} \times \text{elution volume } (\mu\text{l})}{\text{sample volume (ml)}}$$

“Sample volume” is the plasma volume used for DNA isolation and “Elution volume” is the volume of buffer or water used to elute or dissolve isolated DNA. For example if 200ul or 0.2ml of sample is extracted and elution volume is 50ul so result must be multiplied by 250 so result converted to copy/ml.

Conversion rates of IU to copy number

Q. How to convert results from IU to copy number?

A. It depends on the Kit. Based on WHO guidelines, following ratios can be used:

For HBV kit, each IU is equal to 7 copy.

For HCV kit, each IU is equal to 4 copy.

For HIV kit, each IU is equal to 1 copy.

So, results in international unit (IU) must be multiplied by above figures to have the equivalent copy number .

Negative results in translocation test kits

Q. What should I do if in a translocation kit such as BCR/ABL, patient sample is negative in FAM/BCR channel but Positive in VIC/ABL channel with sigmoid graph and CT of above 27?

A. In this case result is *inconclusive* and test should be repeated. All patient samples should be positive in VIC/ABL channel with a sigmoid graph and CT of 27 or less. ABL CT greater than 27 usually happens if not enough cells have been extracted or less than 100 microgram RNA has been used. CTs higher than 27 reduce the sensitivity of the test and may result in *false negative* reports. It is recommended to use buffy-coat and perform RNA isolation with any of the following recommended kits:

TriPure isolation Reagent (Cat. no. 1667157, Roche Applied Science, and Mannheim, Germany).

TRIzol isolation reagent (Cat. no. 15596026, Invitrogene/Thermo Fisher, USA)

Isol-RNA isolation reagent (Cat. no. 2302700, 5 prime/ Thermo Fisher, Germany)

Accuzol isolation reagent (Cat. no. K-3090, Bioneer, Korea)