

Life Science Research Center  
Division of Genomics Research  
Genome Research Hands-on training course

# 「Real-time quantitative PCR」

## —Handbook—

2017年1月21-22, 2022

at Genomics Research Building  
2F Room 203 (lab), 207 (seminar room)

In this training course, the method for quantification of gene expression will be studied by doing actual experiments at lab bench. A real-time PCR system “Step One Plus” is used for analysis and the expression of a gene is compared between control and drug-treated cells. The specific aim of this course is to understand and to be familiar with the basic method for quantitative PCR, the relative standard curve method, and utilize it for further application such as  $\Delta\Delta C_t$  method.

# Real-time quantitative PCR

## SCHEDULE

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### Day 1 (Jul 14, Thurs.)

1. About this course (9:30-9:40)
  2. Principle of real-time PCR (9:40-10:00)
  3. Reverse transcription (RT) (10:00-11:00)
  4. Experimental planning (10:30-11:00) \* during RT reaction
  5. Test experiment 1 (11:05-12:00)  
Check gene amplification and the  $C_t$  value (1<sup>st</sup> PCR)
  6. Designing the primers (13:30-14:00) \* in seminar room
  7. Test experiment 2 (14:00-15:30)  
Determination of the calibration range (2<sup>nd</sup> PCR)
  8. (Additional time, Questions etc.) (15:30-16:00)
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### Day 2 (Jul 15, Fri.)

9. Test experiment 2 (check the result) (9:30-10:00)  
\* in seminar room
10. qPCR experiment (Comparison of gene expression) (10:05-12:00)
11. Interpretation of the result (13:30-14:30)  
\* in seminar room
12. Additional time for re-experiment, questions, etc.  
One can repeat final experiment during this time. (14:30-16:00)