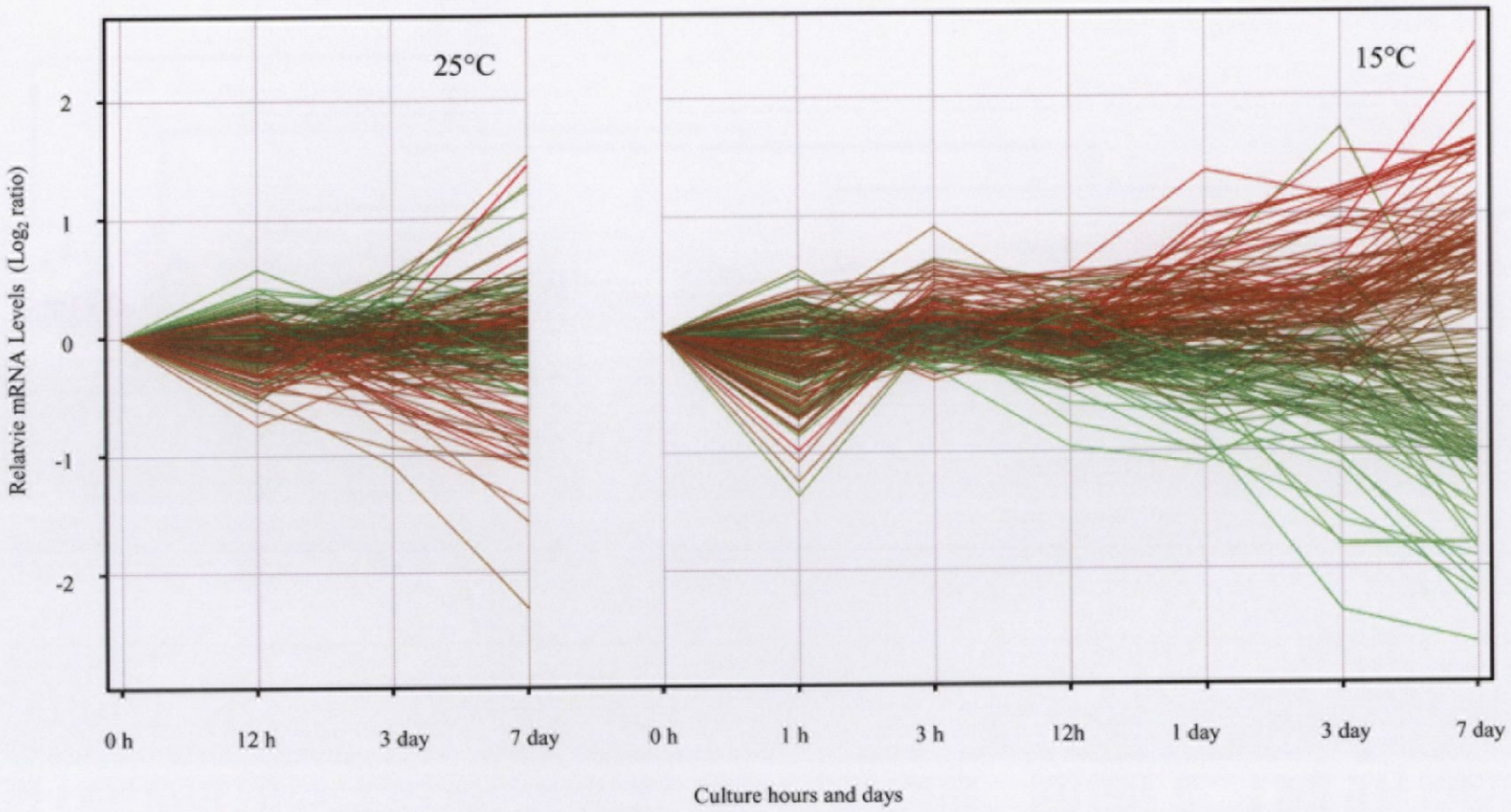

Fig. 3-11. Gene expression profiles of the OLHNI-e1 cell line during 7 days at 15 and 25°C. Lines represent cDNA clones which showed the changes in the accumulated mRNA levels at a significant level of $P<0.05$ on day 7 between 15 and 25°C. Statistical analysis was performed by Mann-Whitney test. Y-axis are determined as shown in Fig. 3-5. Red and green color gradient represents changed in the accumulated mRNA levels of cDNA clones at different levels from increased to decreased ones during culture for 3 days at 15°C.

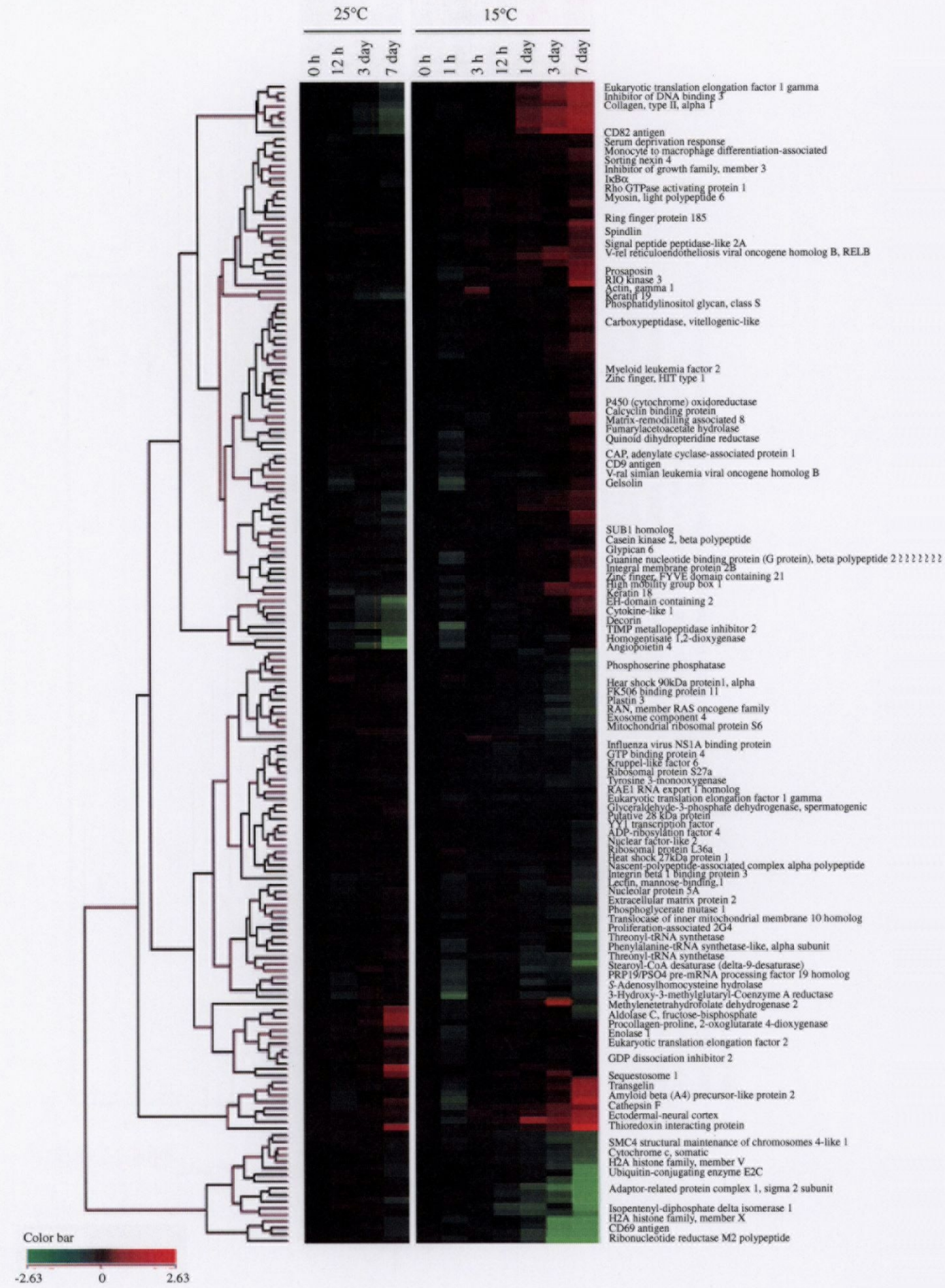

Fig. 3-12. Gene expression patterns in response to temperature shift. OLHNI-e1 cells from the Northern Japanese population were cultured at 25°C to the confluent, and then transferred to 15°C or successively maintained at 25°C. Each row represents a single cDNA clone. The name of genes encoded by cDNA clones are shown if the annotation data are available.

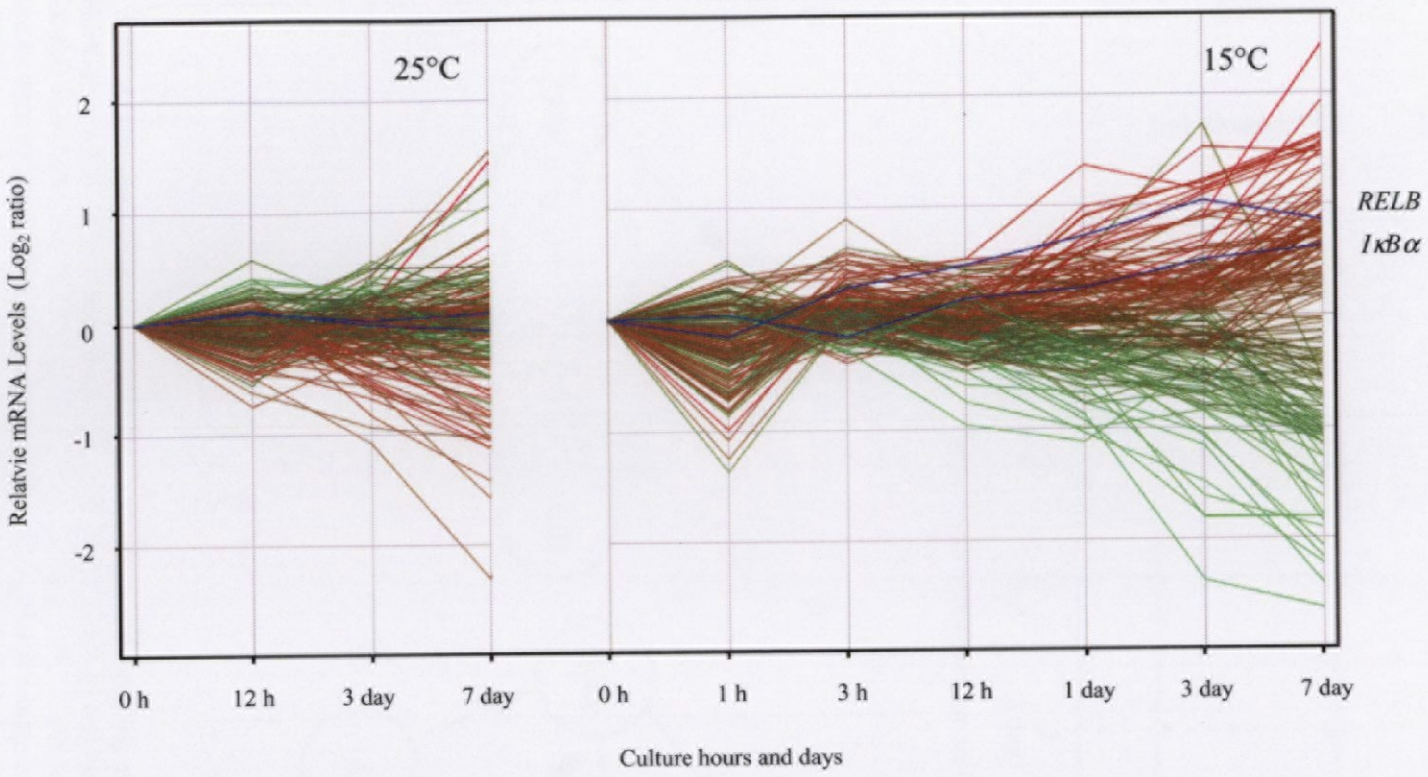

Fig. 3-13. Gene expression profiles of *IκBα* and *RELB* in the OLHNI-e1 cell line during 7 days at 15 and 25°C. Lines represent cDNA clones which showed the changes in the accumulated mRNA levels at a significant level of $P<0.05$ for 7 days between 15 and 25°C. Statistical analysis was performed by Mann-Whitney test. mRNA levels of cDNA clones which encode IκBα and RELB were represented by blue lines. Y-axis and color gradient are determined as shown in Fig. 3-11.

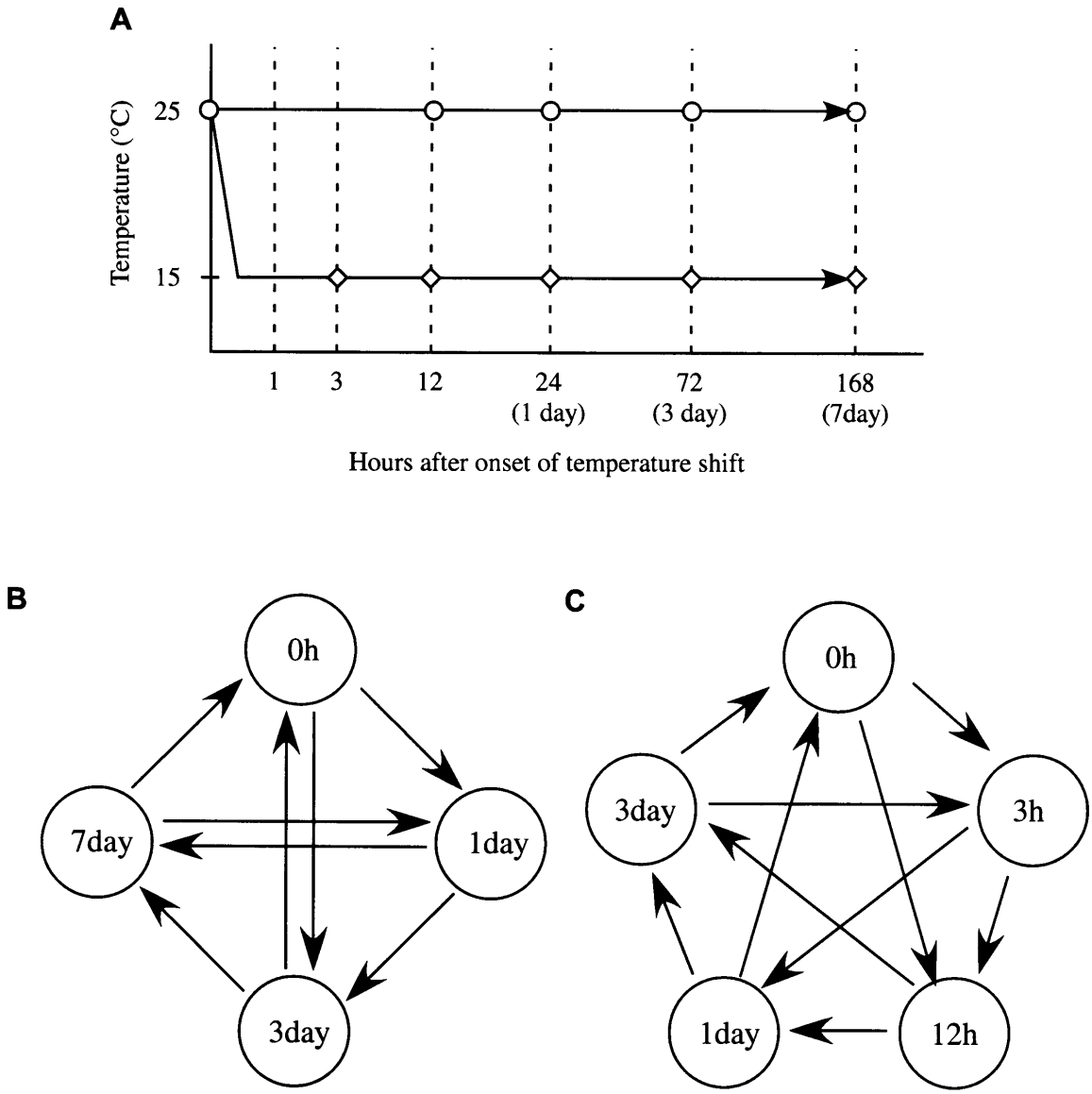

Fig. 3-14. **A,** schematic diagram showing the time course and sampling regime used for cDNAs from the OLHdrR-e3 cell line. The culture temperature for the OLHdrR-e3 cell line from the Southern Japanese population was maintained at 25°C or shifted from 25°C to 15°C. Cells were collected at certain time intervals shown by open symbols. **B, C,** loop designs for a total of 4 and 5 samples from the experimental group at 25 and 15°C, respectively. Each arrow represents a connection flow between two samples to be hybridized for microarray. One each microarray, arrows indicate flows from Cy3-labeled cDNAs to Cy5-labeled cDNAs in comparison.

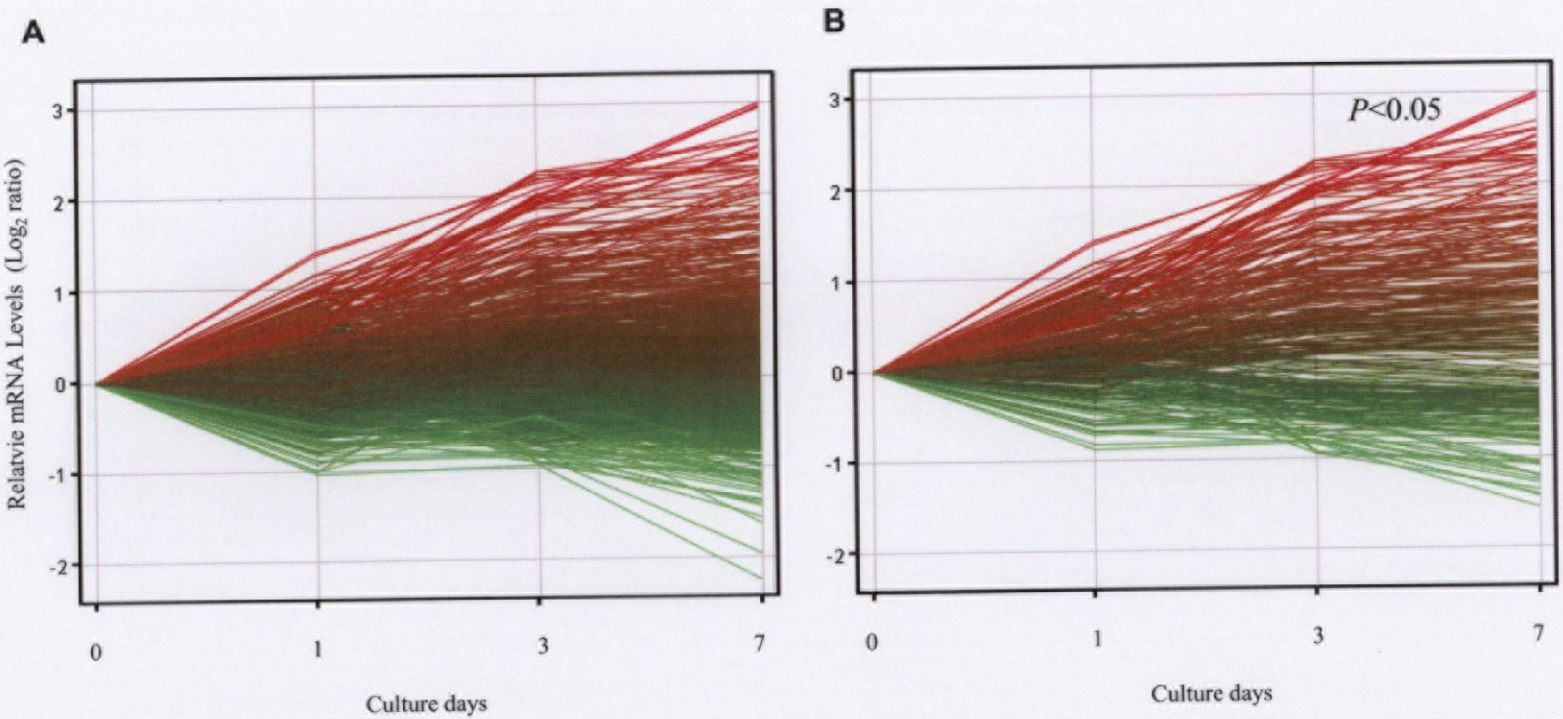

Fig. 3-15. Gene expression profiles of the OLHdrR-e3 cell line during 7 days at 25°C. Lines represent cDNA clones which showed the changes in the mRNA levels (**A**) and those at a significant level of $P<0.05$ in at least one comparison among the accumulated mRNA levels from different incubation periods (**B**). Statistical analysis was performed by Kruskal-Wallis ANOVA. Y-axis and color gradient are determined as shown in Fig. 3-5.

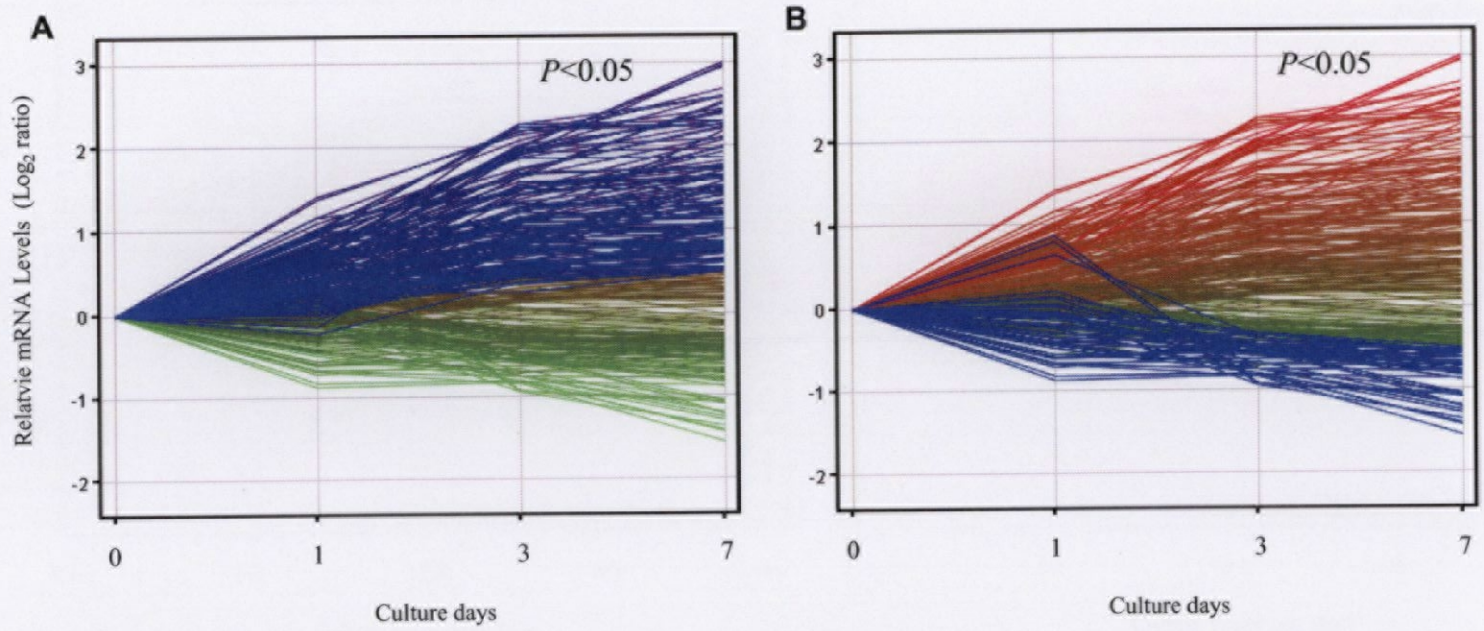

Fig. 3-16. Gene expression profiles of the OLHdrR-e3 cell line during 7 days at 25°C (P<0.05). The expression patterns of cDNA clones which showed the changes in the relative accumulated mRNA levels more than 0.5 (**A**) and less than -0.5 (**B**) in $\log_2$ ratio of accumulated mRNA levels on day 7 are shown by blue lines. Statistical analysis was performed by Kruskal-Wallis ANOVA as shown in Fig. 3-15. Y-axis and color gradient are determined as shown in Fig. 3-5.

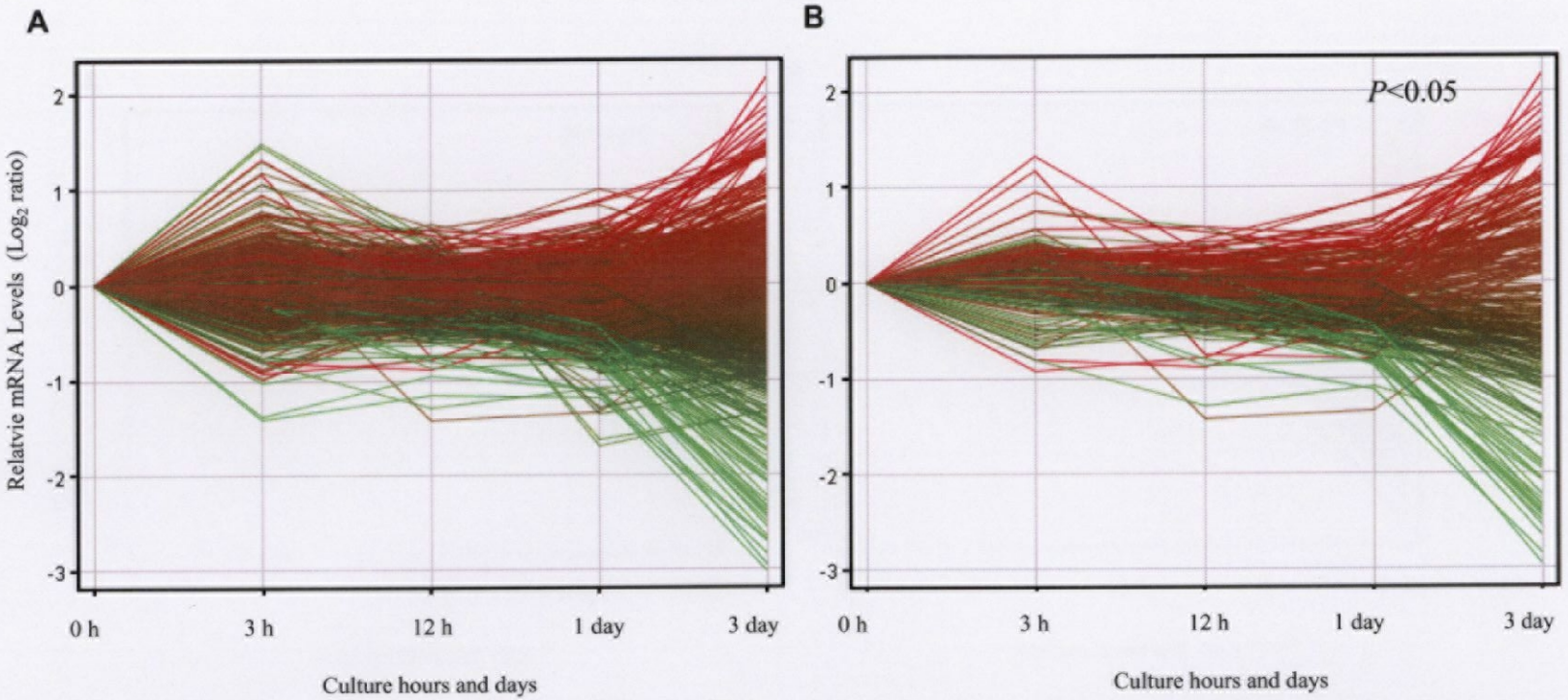

Fig. 3-17. Gene expression profiles of the OLHdrR-e3 cell line during 3 days at 15°C. Lines represent cDNA clones which showed the changes in the mRNA levels (**A**) and those at a significant level of $P<0.05$ in at least one comparison among the accumulated mRNA levels from different incubation periods (**B**). Statistical analysis was performed by Kruskal-Wallis ANOVA. Y-axis represents the ratio of accumulated mRNA levels of each incubation period to those of 0 h at a logarithmic scale. Red and green color gradient represents changed in the accumulated mRNA levels of cDNA clones at different levels from increased to decreased ones during culture for 3 days.

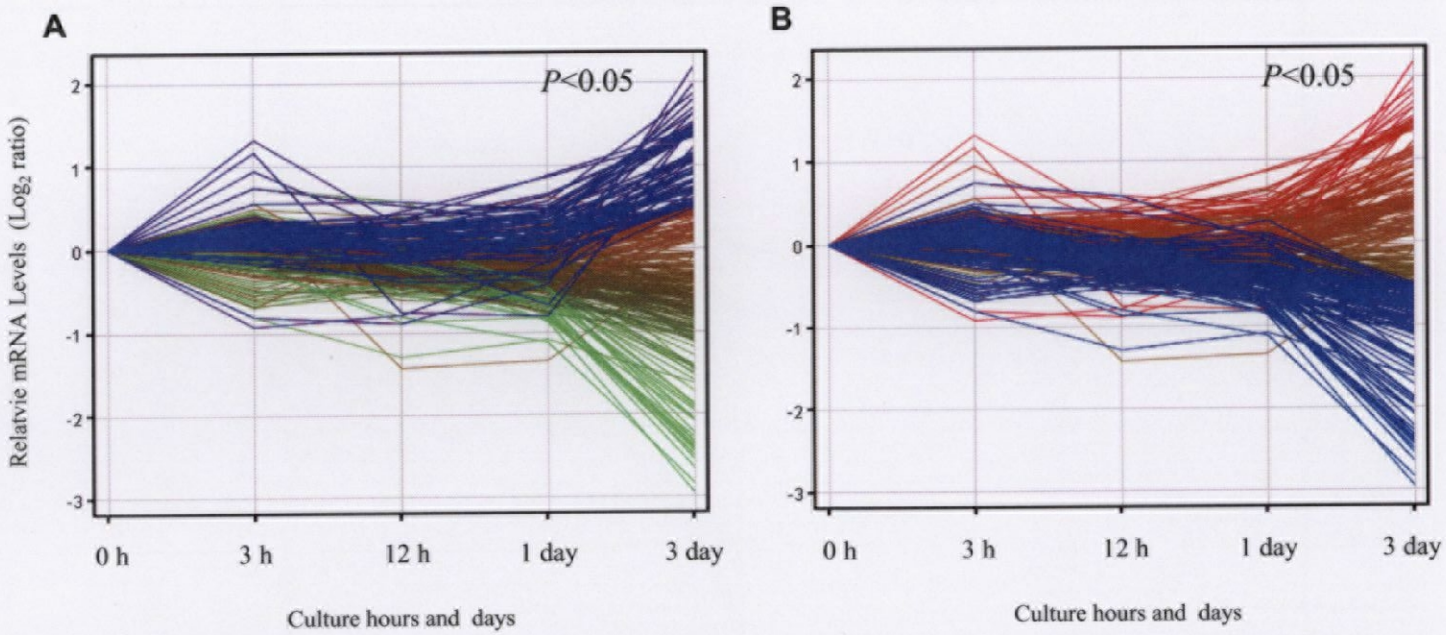

Fig. 3-18. Gene expression profiles of the OLHdrR-e3 cell line during 3 days at 15°C (P<0.05). The expression patterns of cDNA clones which showed the changes in the relative accumulated mRNA levels more than 0.5 (**A**) and less than -0.5 (**B**) in $\log_2$ ratio of accumulated mRNA levels for 3 days of each incubation period to those of 0 h at a significant level of P<0.05 for 7 days are shown by blue lines. Statistical analysis was performed by Kruskal-Wallis ANOVA as shown in Fig. 3-17. Y-axis and color gradient are determined as shown in Fig. 3-17.

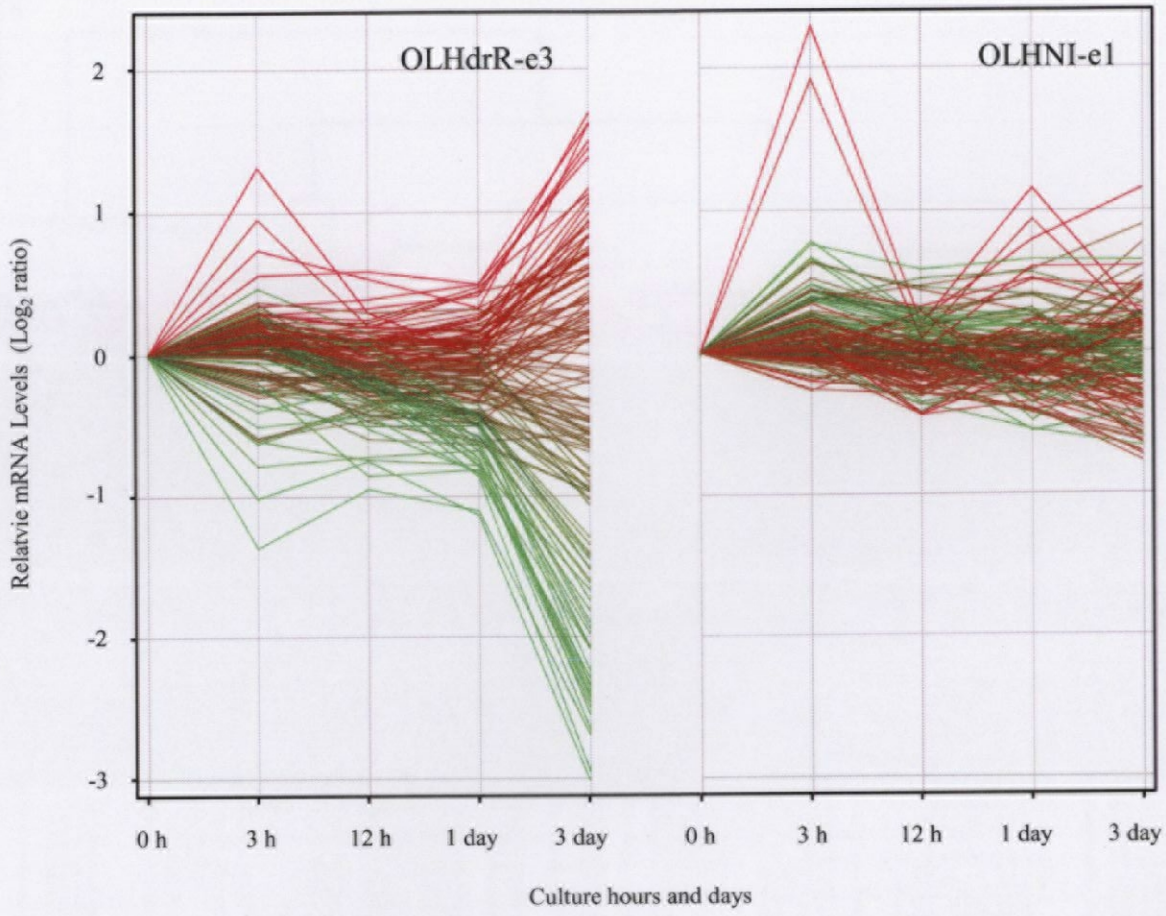

Fig. 3-19. Gene expression profiles of the OLHNI-e1 and OLHdrR-e3 cell lines during 3 days at 15°C. Lines represent cDNA clones which showed the changes in the accumulated mRNA levels at a significant level of $P<0.05$ on day 3 between OLHNI-e1 and OLHdrR-e3 cell lines. Statistical analysis was performed by Mann-Whitney test. Y-axis are determined as shown in Fig. 3-5. Red and green color gradient represents changed in the accumulated mRNA levels of cDNA clones at different levels from increased to decreased ones during culture for 3 days in OLHdrR-e3 cell line.