



**Figure 9**

The hypothetical decreases in LHCI activities during its photoinhibition. Here, LHCI protein is hypothesized to degrade in accordance with the first-order decay kinetics as shown in this figure. Based on the differences in LHCI content in leaves grown under the different light conditions (Figures 4, 5, 6), we defined the relative functional antenna size of LHCI in LL- (100), ML- (50), and HL-grown plants (25) as an initial LHCI activity, respectively. (a): When all LHCI proteins showed the same rate constant for LHCI degradation by its photoinhibition, the functional antenna size of LHCI in HL-grown plants never overcomes that in LL- and ML-grown plants. However, when the inactivation rate constant is assumed to be changed by the growth light conditions and it is decreased with increasing growth light intensity, the functional antenna size in LL-grown plants showed a lower level than that in HL-grown plants. That is, under this hypothetical situation, the level of the functional antenna size of LHCI can be inverted depending on the period of its inhibitory treatment.