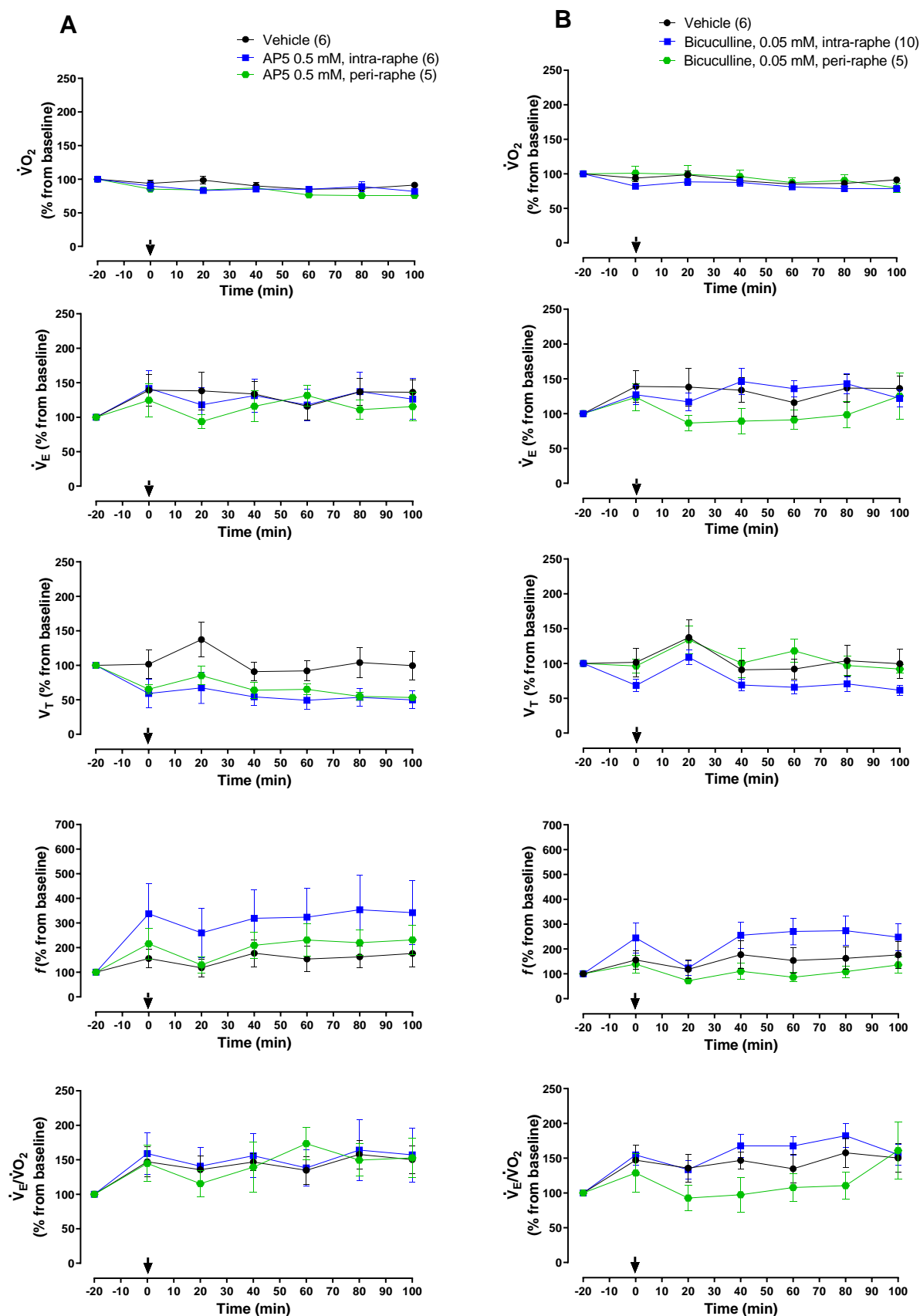
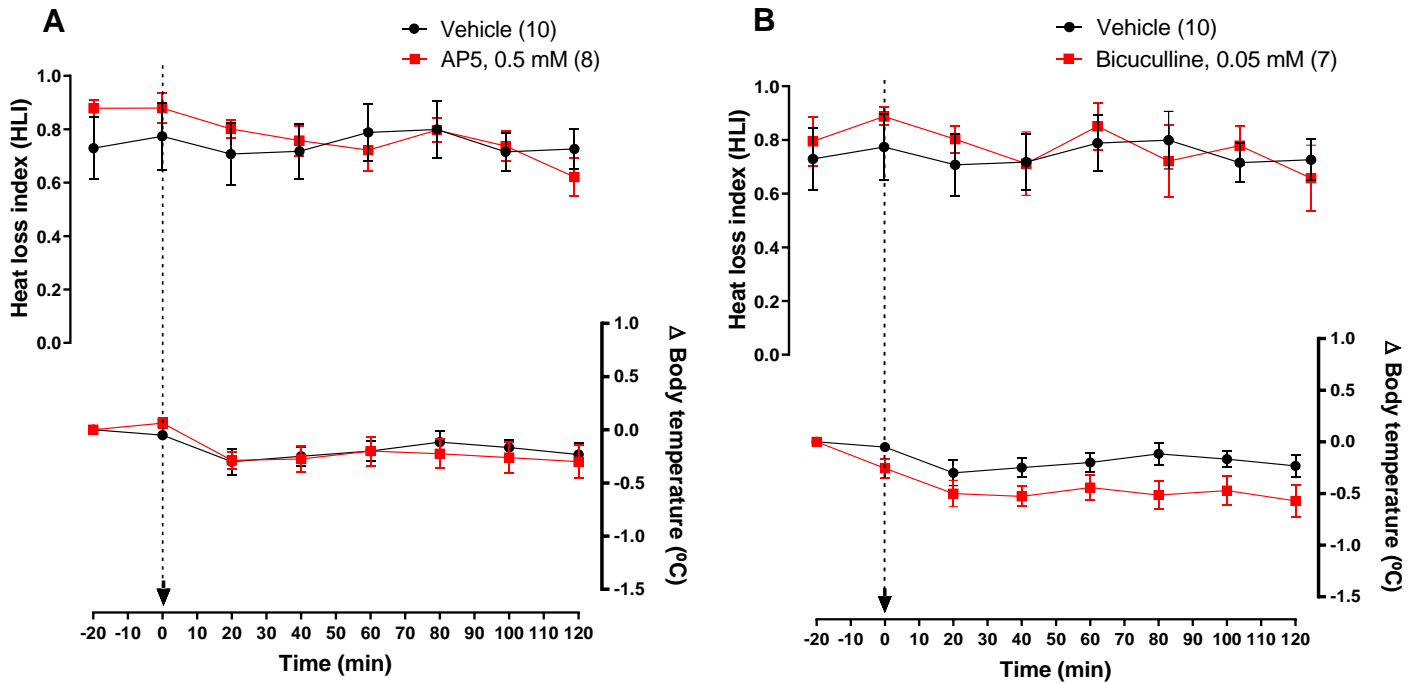


Ta= 36°C

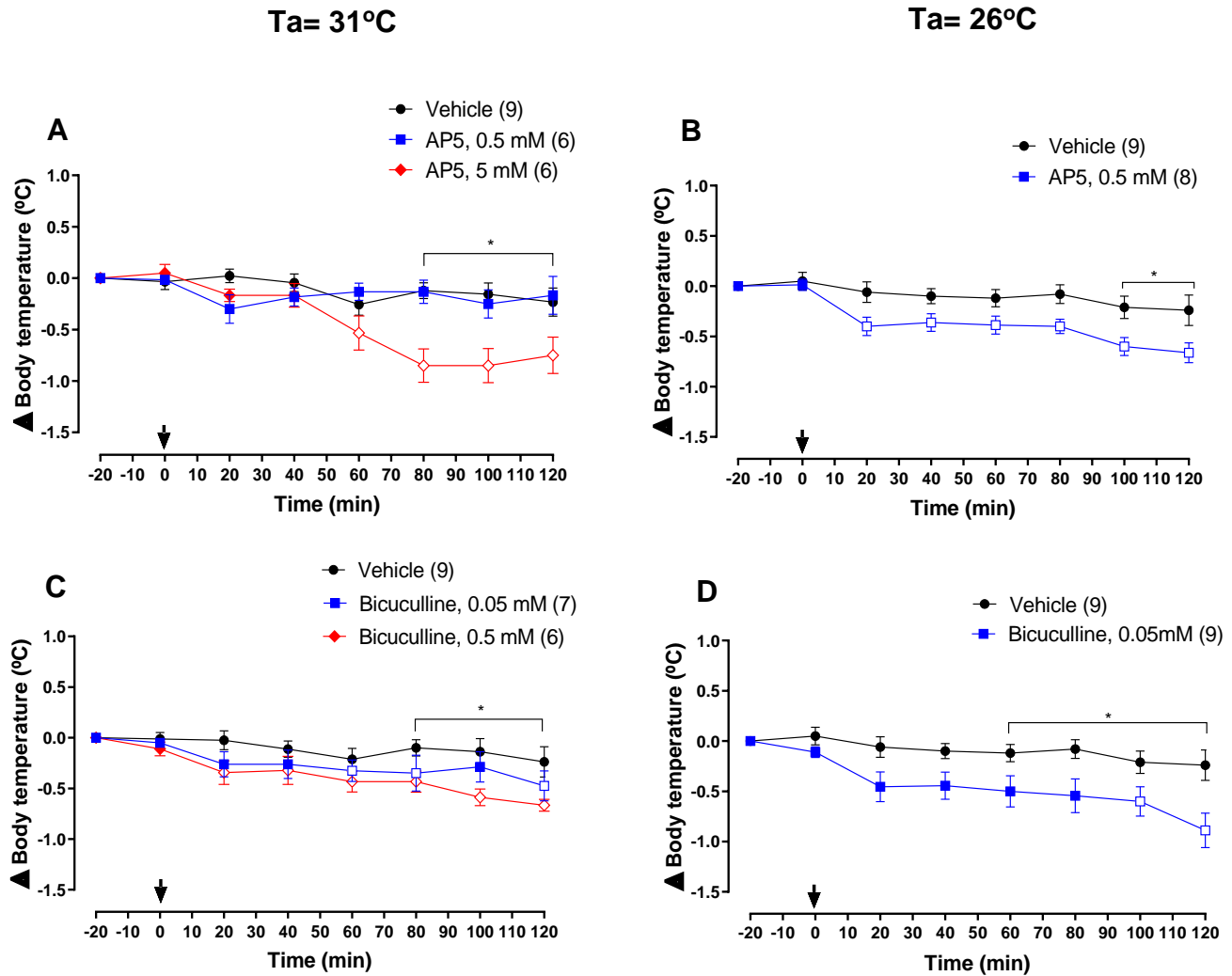


**Figure S1.** Effect of intra-raphe microinjection of the NMDA receptor antagonist AP5 (A) and the GABA<sub>A</sub> receptor antagonist bicuculline (B) or vehicle on oxygen consumption ( $\dot{V}O_2$ ), pulmonary ventilation ( $\dot{V}_E$ ), tidal volume ( $V_T$ ), breathing frequency ( $f$ ) and respiratory equivalent ( $\dot{V}_E/\dot{V}O_2$ ) of one-week-old chicks at 36°C. Arrow indicates the time of microinjection. Number of animals is shown between parentheses. Data are means  $\pm$  SEM.

Ta= 36°C



**Figure S2.** Effect of intra-raphé microinjection of the NMDA receptor antagonist AP5 (A) and the GABA<sub>A</sub> receptor antagonist bicuculline (B) or vehicle on the heat loss index of one-week-old chicks at 36°C. The arrow indicates the time of microinjection. Number of animals is shown between parentheses. Data are shown as means ± SEM.



**Figure S3. Effect of intra-raphé microinjection of the NMDA receptor antagonist AP5 (A and B) and the GABA<sub>A</sub> receptor antagonist bicuculline (C and D) or vehicle on the body temperature of one-week-old chicks at 31°C and 26°C.** These body temperature data are from the chicks used in protocol 2 to calculate heat loss index (see Fig. 6) under different treatments and conditions. Arrow indicates the time of microinjection. Number of animals is shown between parentheses. Intra-raphé: microinjection located in the medullary raphe. Data are means  $\pm$  SEM. \*significant difference ( $p < 0.05$ ) from vehicle at the same time. Open symbols mean significant difference ( $p < 0.05$ ) over time from the pre-injection value in the same treatment.