

**Influence of hyperthermia up-regulated CJIC on tumor  
invasiveness and its mechanism**

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## Influence of hyperthermia up-regulated GJIC on tumor invasiveness and its mechanism

### Aim

To explore the effect of junctional intercellular communication (GJIC) in hyperthermia-induced tumor invasiveness decreases process.

### Methods

Dynamic monitoring of HSP70 and Cx43 protein expression of C6 cells (western blotting and immunohistochemical methods); Study of GJIC on glioma by scrape-loading dye transfer method, detection of the glioma invasiveness with crystal violet staining method.

### Results

After the application of hyperthermia on C6 cells, the protein expression of HSP70 and Cx43 were gradually increased and then reached the peak at 30min and 120min respectively. The function of GJIC was positively correlated with the Cx43 protein expression in C6 cells. The glioma invasiveness is lower; the GJIC function is stronger.

### Conclusion

Hyperthermia decreased glioma invasiveness is due to up-regulated the function of GJIC which could cause the tumor invasiveness attenuate by increasing HSP70 and Cx43 protein expression of glioma.

### Keywords

Hyperthermia; Glioma; tumor invasiveness; Gap junctional intercellular communication; Heat shock protein 70; connexin 43

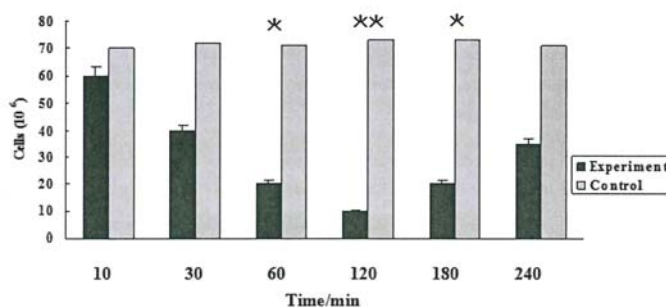


Figure 1. Attached cells on the membrane downside after heat treatment (n=15). \*P<0.05 and \*\*P<0.01 compared with control group

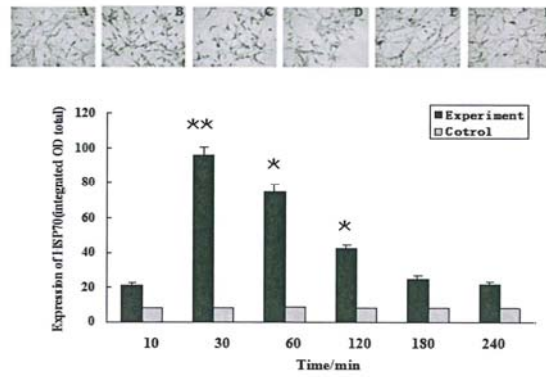


Figure 2. Expression of hsp70 in C6 cells after hyperthermia (HT) (n=15). Anodic for HSP70 protein in experimental group and comparison group by immunohistochemical and underneath was proportional column diagram. A: hyperthermia 10 min; B: hyperthermia 30 min; C: hyperthermia 60 min; D: hyperthermia 120 min; E: hyperthermia 180 min; F: hyperthermia 240 min. \*P<0.05 and \*\*P<0.01 compared with control group

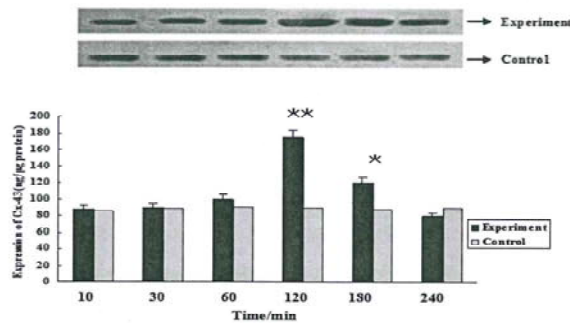


Figure 3. Expression of Cx43 in C6 cells after hyperthermia (HT) (n=15). Anodic for Cx43 protein in experimental group and comparison group by western blotting and underneath was proportional column diagram. \*P<0.05 and \*\*P<0.01 compared with control group

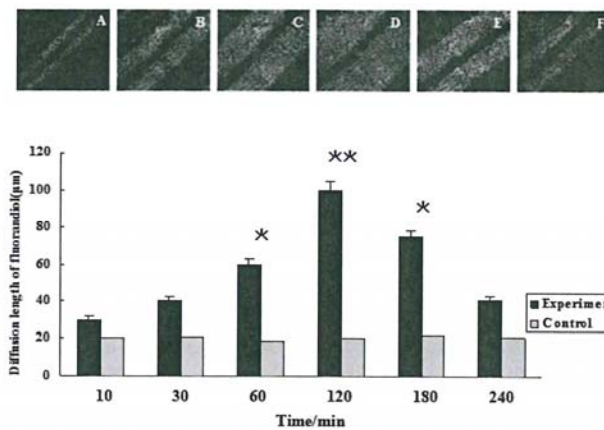


Figure 4. Study of GJIC on glioma by scrape-loading dye transfer method (n=15). Anodic for diffusion length of fluorandiol in gliomas and underneath was proportional column diagram. A: hyperthermia 10 min; B: hyperthermia 30 min; C: hyperthermia 60 min; D: hyperthermia 120 min; E: hyperthermia 180 min; F: hyperthermia 240 min. \*P<0.05 and \*\*P<0.01 compared with control group