



POSTER

## Effects of carnosine on regulation of migration and invasion in human colorectal cancer cells

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### Abstract

Colorectal cancer is the third most commonly diagnosed cancer in the world. Carnosine is an endogenous dipeptide found in vertebrate skeletal muscles. It is known to have anti-fatigue, antioxidative, antihypertensive, antidiabetic, and cancer inhibiting effects. However, little research has been done regarding its influence on the metastasis of colon cancer. This study cultivated HCT-116 human colon cancer cells as a test model in order to investigate the impact of carnosine on the migration and invasion of human colon cancer cells. The results showed that 48-hour treatments of HCT-116 cells with 0.5, 1, or 5 mM carnosine each significantly inhibited the migration ability of the cells ( $P < 0.05$ ). The 48-hour treatments with 0.5, 1, or 5 mM carnosine were also found to significantly reduce MMP-9 activity ( $P < 0.05$ ), but not MMP-2 expression. Furthermore, when HCT-116 cells treated with 1 or 5 mM carnosine, invasion ability are significantly decreased and significantly increased E-cadherin expression ( $P < 0.05$ ). On the other hand, the protein of TIMP-1, an inhibitor of MMP-9, is significantly increased after 1 or 5 mM carnosine treatment ( $P < 0.05$ ). In addition, the u-PA protein level are significantly decreased after carnosine treatment.

The results indicate that carnosine can regulate the migration and invasion by regulating MMPs and its regulator molecular expression in HCT-116 cells.

### Keywords

Carnosine, metastasis, migration, invasion

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### References

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