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## Effect of melatonin on growth and abnormal deposition of extracellular matrix component in uterine leiomyoma cells

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Women suffering from leiomyoma account for a quarter of the world's female population. Studies indicate that leiomyoma may be expanded by estrogen imbalance, abnormal deposition of extracellular matrix and stem cell proliferation. Melatonin is an endogenous hormone produced by the pineal gland in the brain, can regulate physiological clock and secrete estrogen. In this study, we investigated the antitumor effect of melatonin on leiomyoma and smooth muscle cell (ELT3, UtSMC) *in vitro*. We examined the effects of melatonin on leiomyoma stem-like cells number, cell proliferation, cell cycle regulation, apoptosis or autophagy related protein expression and accumulation of extracellular matrix. Melatonin significantly inhibited the proliferation of leiomyoma cell in a dose-dependent and time-dependent manner. Melatonin reduced on leiomyoma stem-like cells number and induced leiomyoma cell early and lately apoptosis. Melatonin induced apoptosis and autophagy related protein expression. Melatonin inhibited accumulation of extracellular matrix on leiomyoma cell. These findings suggest that melatonin may inhibit leiomyoma cell proliferation and have the potential to improve the development of leiomyoma associated with functional food.

### Biography

Yen-Ting Tung is currently a student in Taipei Medical University of Nutrition and Health Sciences. He studies the effect of phytochemicals on leiomyoma and cancer disease.

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