

## Autophagy induced by 5-fluorouracil and hypoxia in CD133+ colon carcinoma cells maintain the cytoactive

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Autophagy play a different role in tumor cell death and survival, the effect of autophagy in CD133+ stem cell like cancer cells is still unclear. The purpose of this study was to investigate the change and effect of autophagy induced by chemotherapeutics and hypoxia in CD133+ cells. The CD133+ subpopulation of colon carcinoma cell line SW480 was purified with MACS, and enriched by serum-free medium culture system. In order to simulate the hypoxia microenvironment with 1% oxygen concentration, the anaerobic jar was used. Furthermore, the cells were treated with 1 $\mu$ g/mL 5-fluorouracil(5-FU). After treatment with that two factors for 24 to 48 hours, the emergence of a large number of autophagosomes was observed by TEM, the number of MDC positive utophagy vesica increased too, and the fluorescence intensity of MDC was significantly increased using FCM assay( $P<0.05$ ). In that process, the transformation of autophagy related protein LC3-I to LC3-II enhanced, the level of LC3-II significantly increased, but the transformation decreased following addition of 3-MA for 48 hours, and the level of LC3-II reduced. Simultaneously, the viability and cloning efficiency didn't decline until addition of 3-MA ( $P<0.05$ ). Immunohistochemical datas in 94 cases of colorectal cancer tissue demonstrated that both of HIF-2 $\alpha$  and Beclin 1 had a positive relationship with classification and Duke's staging in colorectal cancer ( $P<0.05$ ), and the metastasis of lymphnode was positively correlative with Beclin 1 and negatively with HIF-2 $\alpha$  ( $P<0.05$ ). These results suggest that 5-FU and hypoxia microenvironment could induce the enhancement of autophagy and maintain cell viability in CD133+ cancer cells.

### Biography

Min Li has completed her Ph.D at the age of 44 years from Lanzhou University. She is the director of Institute of Pathology in School of Basic Medical Sciences, Lanzhou University, the teammate of "Polypeptide drugs" Yangtze River scholar innovation team, the member of Key Lab of Preclinical Study for New Drugs of Gansu Province, The Trans-Century Academic Pacesetter in Colleges and Universities of Gansu Province. The research interests covers the mechanism of infiltration and metastasis, antineoplastic of Chinese medicine, and cancer stem cells, etc. She has published more than 60 papers in reputed national and international journals.

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