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Cross-talk between autophagy and apoptosis in an experimental *in vitro* model of cholangiocarcinoma

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Apoptosis plays a crucial role in cancer, representing a tumor suppressor pathway. Conversely the role of autophagy in cancer cells is still largely debated. Autophagy may be impaired during the initial steps of cancer development, promoting cancer onset, while it may increase within tumor mass, where it can represent a survival strategy for cancer cells exposed to metabolic and hypoxic stress conditions. In the present work we analyzed the crosstalk between autophagy and apoptosis in cell cultures of human cholangiocarcinoma cell line (HuCCT1) and healthy cholangiocyte cell line (H69). By Western blot experiments in HuCCT1 cells we found higher levels of the anti-apoptotic c-Flip proteins as compared to H69 consistently with the lower apoptosis level observed in cancer cells. We also found that autophagy induction, obtained through nutrient starvation or rapamycin, led to c-Flip proteins down-regulation-in in HuCCT1 but not in H69 suggesting that autophagy promotion may represent a trigger for HuCCT1 apoptosis. Furthermore autophagy induction in HuCCT1 does not promote cell proliferation as evaluated through PCNA Western blot experiments. Additional experiments are ongoing to elucidate the effects of caspase activity on autophagy in our experimental models. It has been previously shown that caspase activity is able to interfere with autophagy, promoting cleavage of Beclin 1 (1), which therefore loses its ability to induce autophagy (2). We are currently investigating in our *in vitro* model if caspase inhibitors may promote autophagy of cholangiocarcinoma cells.

References

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