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# Anticancer potential of xanthohumol loaded into SBA-15 mesoporous silica particles against B16-F10 cells

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Prenylflavonoid from hops - xanthohumol (XN) has been shown to possess diverse biological properties, including strong anticancer activity. One of the possibilities for improving delivery and effectiveness of drugs is the use of mesoporous silica nanoparticles such as nontoxic SBA-15. The aim of this study was the evaluation of the *in vitro* anticancer potential of XN loaded with different amounts into SBA-15 particles against malignant mouse melanoma B16-F10 cells. Our data indicate that SBA-15 containing XN showed a loading rate–activity dependence. Importantly, immobilization of XN into SBA-15 preserved and even potentiated its antitumor potential, in comparison to its free form. Also, by loading into SBA-15 carrier, XNs’ anticancer mode of action converted from predominantly cytotoxic to cytostatic, resulting in a reduction of dividing potential. In addition, contrasting the previously observed apoptotic-inducing property of free XN, immobilized XN induced autophagic cell death that might be important for disabling tumor repopulation in response to apoptotic-induced cell proliferation, a mechanism often associated with therapy failure of advanced forms of cancer<sup>1</sup>.

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## References

1. Krajnović T, et al. Anticancer potential of xanthohumol and isoxanthohumol loaded into SBA-15 mesoporous silica particles against B16F10 melanoma cells. *Materials* 2022;15:5028.