

## THE ROLE OF AUTOPHAGY IN THE EVOLUTION OF TUMORS

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### Introduction

Oncological diseases are complex polygenic pathologies in the development of which multiple signaling cascades are involved.

### Keywords

autophagy, cascade of reactions, gene mutations, tumors.

### Purpose

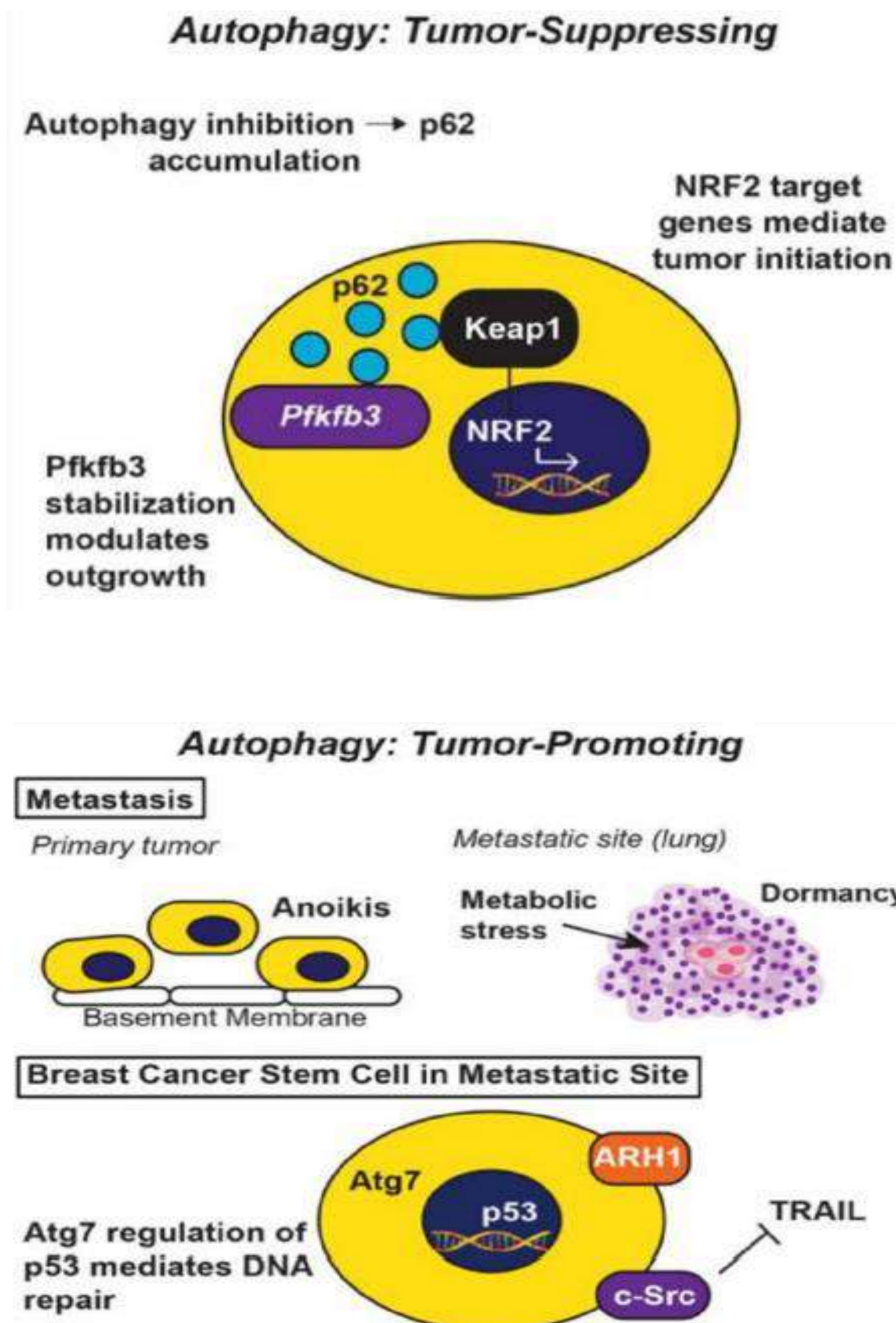
Had been studied the role of autophagy in the human body and the mechanisms by which it participates in the evolution of tumors.

### Material and methods

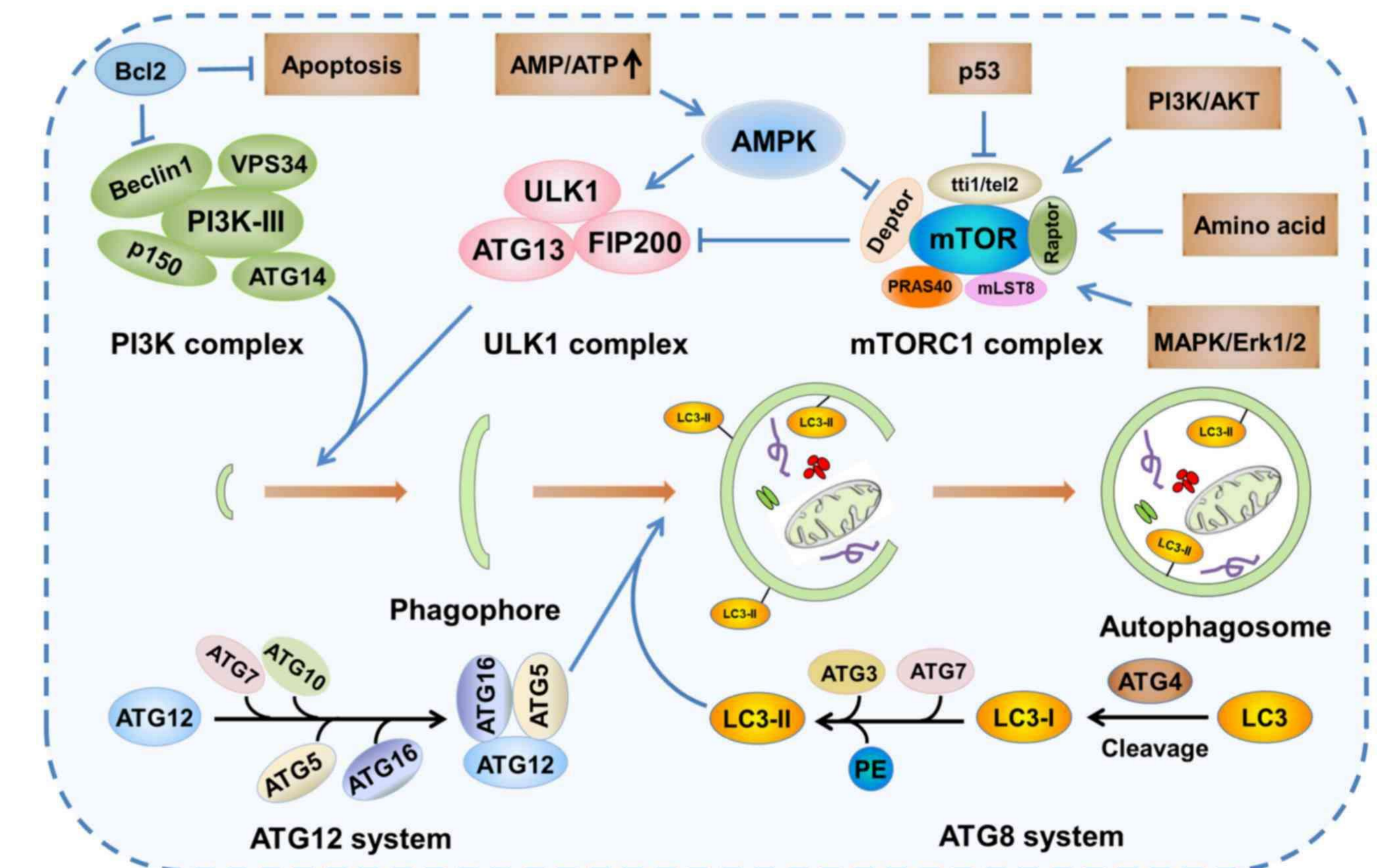
Literature information was analyzed using the MEDLINE, PubMed and Medscape databases.

### Results

In the initial stage of the oncogenesis process, autophagy acts as a suppressor of tumor growth, but in the late stage of oncogenesis contributes to tumor development by providing cells with substrate for the synthesis of ATP and macromolecules under stress and defends tumor cells by inhibiting anoikis. Respectively, mutations in a series of genes such as Beclin 1, UVRAG, PARK2, Bif-1, Atg12b, Atg5, Atg9b, from the cascade of reactions of the autophagy process, involve expression products that are indispensable for autophagy.



Currently, a lot of chemical interactions have been discovered that can activate / inhibit the activity of autophagy. The group of basic chemical modulators are inhibitors of the mTORC1 kinase complex with high specificity and regulator only of autophagy. Today, in the fight against cancer in advanced stages, a multitude of chemotherapeutic preparations are applied, which are based on the inhibition and diminution of the autophagy process.



### Conclusions

The development of new modulators of autophagy opens a new perspective in achieving more effective remedies to combat cancer.