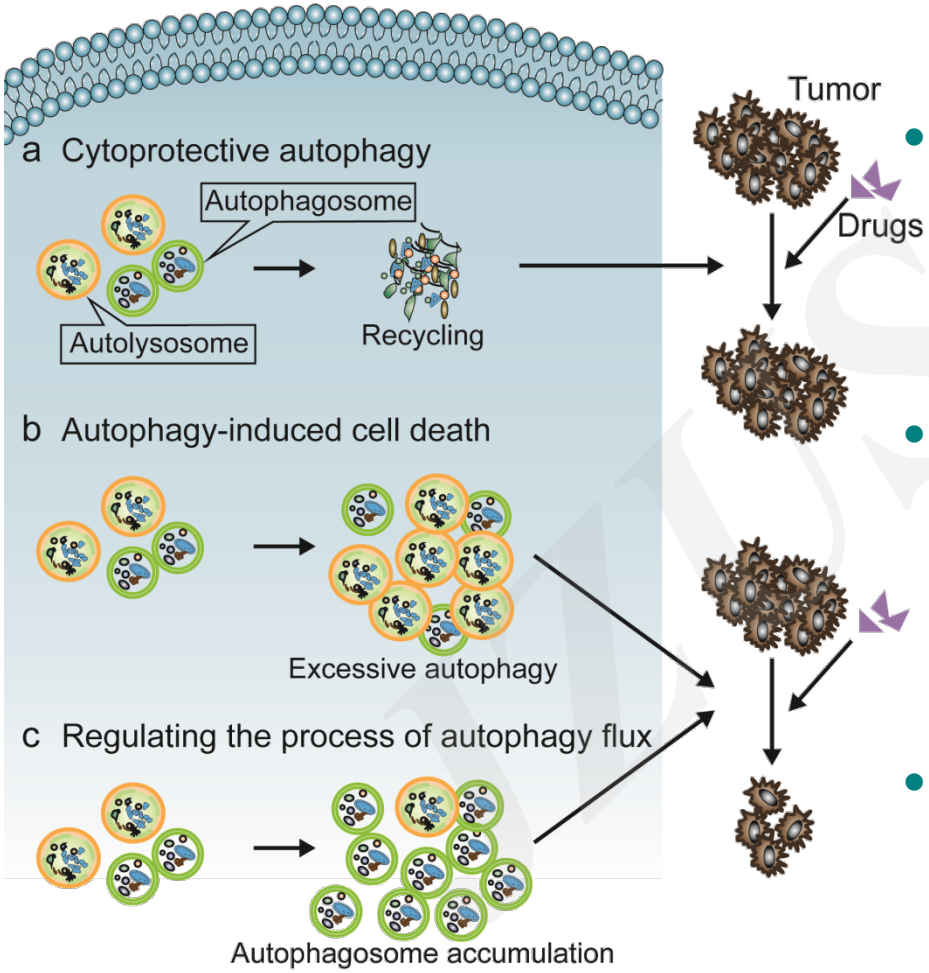
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MicroRNAs involved in drug resistance of breast cancer by regulating autophagy

Key words: Autophagy, MicroRNA, Breast cancer, Drug resistance

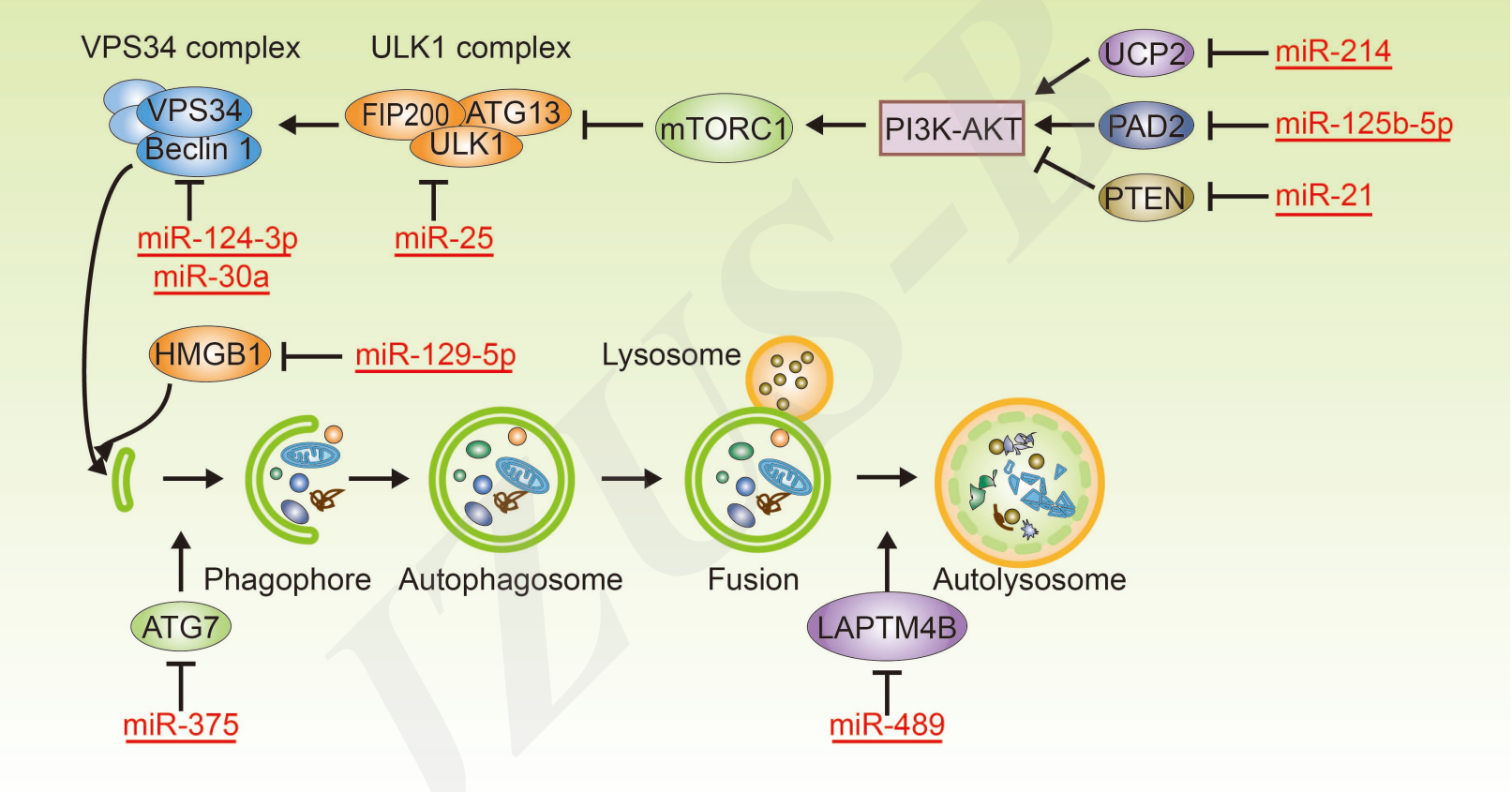
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Autophagy and drug resistance of breast cancer



- a. Cytoprotective autophagy leads to drug-resistance of breast cancer
- b. Autophagy-induced cell death increases the sensitivity of breast cancer cells to drugs
- c. Regulating the process of autophagy flux affects the sensitivity of breast cancer to drugs.

Autophagy-related proteins and pathways and their associated miRNAs in drug resistance of breast



MiRNAs involved in the regulation of autophagy which affects drug sensitivity in breast cancer cells

miRNA	Target	Autophagy protein/pathway	Autophagy	Sensitivity	Cell type	References
miR-214	UCP2	AKT/mTOR	↓	↑(Endo)	MCF7/LCC9 cells	Yu, X., et al., 2015
miR-125b-5p	PAD2	AKT/mTOR	↑	↑(Endo)	MCF7/TamR cells[a]	Li, F., et al., 2019
miR-21	PTEN	PI3K-AKT-mTOR	↓	↓(Endo)	MCF-7 cells	Yu, X., et al.,2016
miR-25	ULK1	ULK1	↓	↓(Chemo)	MCF-7/ADR cells[b]	Wang, Z., et al., 2014
miR-124-3p	Beclin1	Beclin1	↓	↑(Endo)	MCF-7 cells	Zhang, F., et al., 2016
miR-30a	Beclin1	Beclin1	↓	↑(Chemo)	MCF-7 cells	Zou, Z., et al., 2012
miR-375	ATG7	ATG7	↓	↑(lapatinib and imatinib)	FRBC cells[c]	Liu, L., et al., 2018
miR-129-5p	HMGB1	HMGB1	↓	↑(Chemo)	MCF-7 cells	Shi, Y., et al., 2019
miR-489	LAPTM4B	LAPTM4B	block maturation	↑(Chemo)	Multiple breast cancer cells	Soni, M., et al., 2018

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