

Actinidia arguta: A Natural Ally in Cutaneous Melanoma Combat

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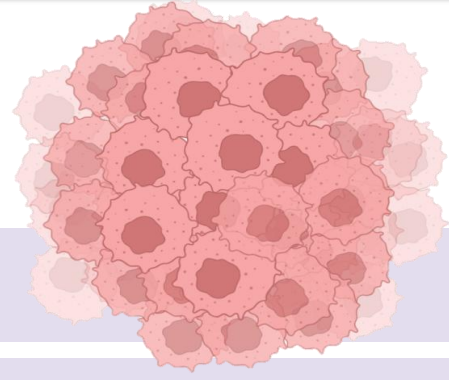
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INTRODUCTION

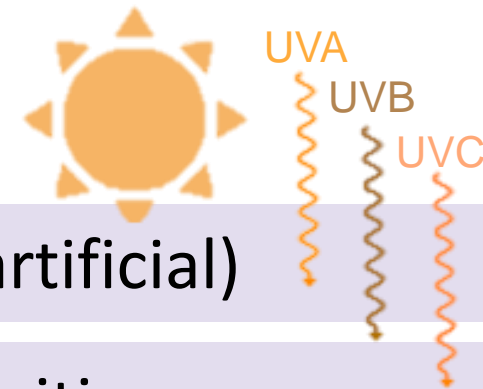
Cutaneous Melanoma

- Deadliest form of skin cancer
- Triggered by genetic and environmental factors
- Notable metastatic rate and therapeutic resistance
- Frequently associated with altered signaling pathways, such as MAPK and PI3K/AKT pathways
 - BRAF and NRAS are the most common mutations



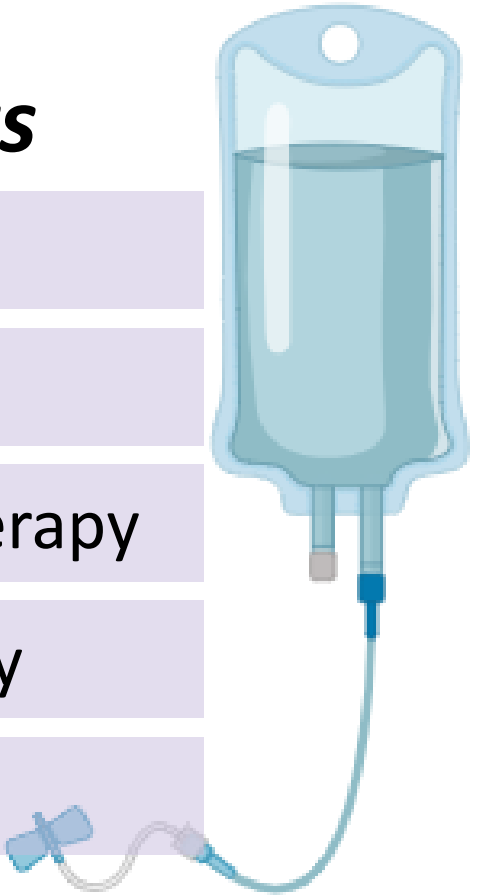
Potential causes

- UV radiation (natural or artificial)
- Age and genetic predisposition
- Inflammation and immune modifications
- Exposure to carcinogenic compounds
- Scars and chronic wounds



Current treatments

- Surgical excision
- Radiation
- Chemo- and immunotherapy
- Target molecular therapy
- Topical treatments



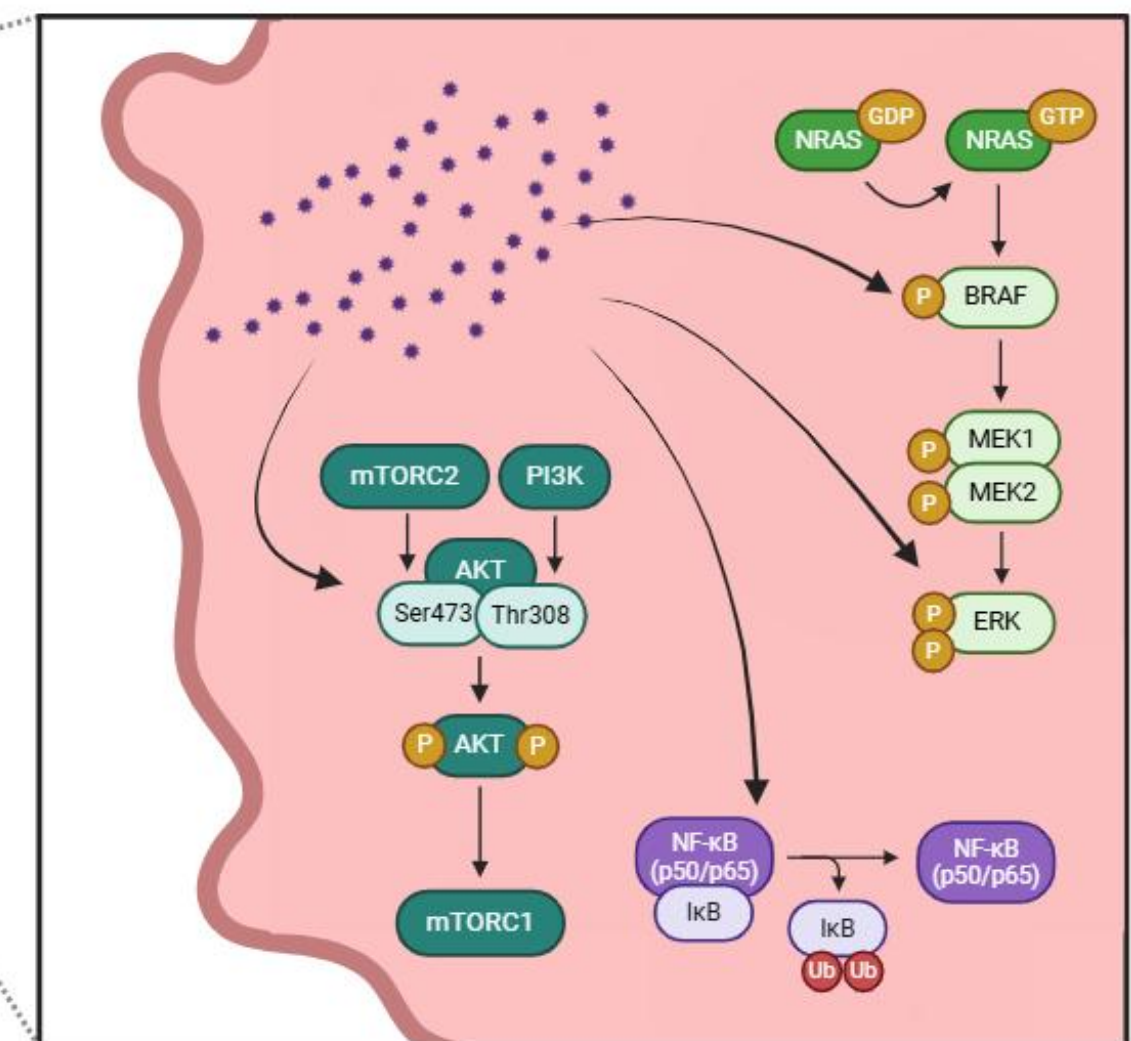
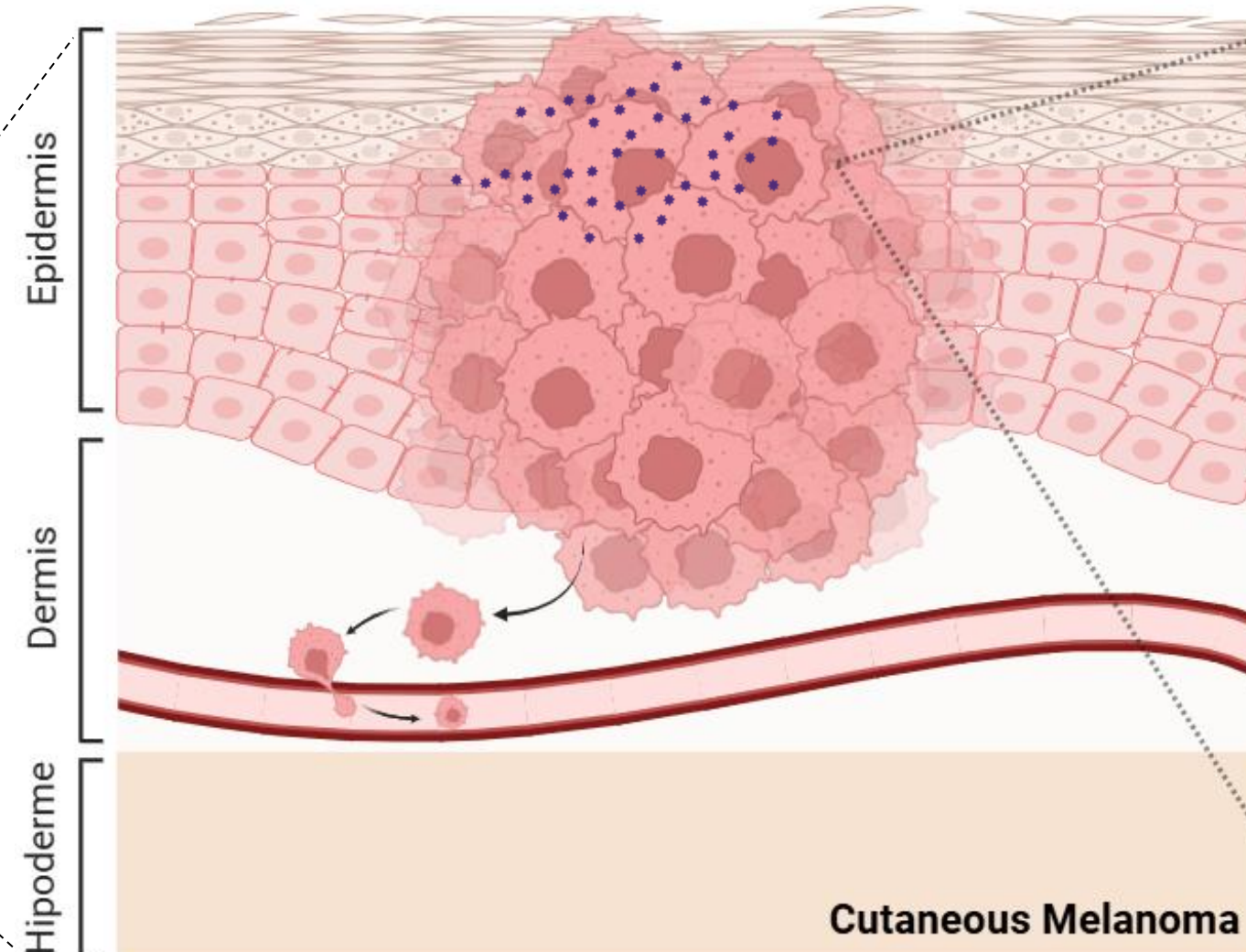
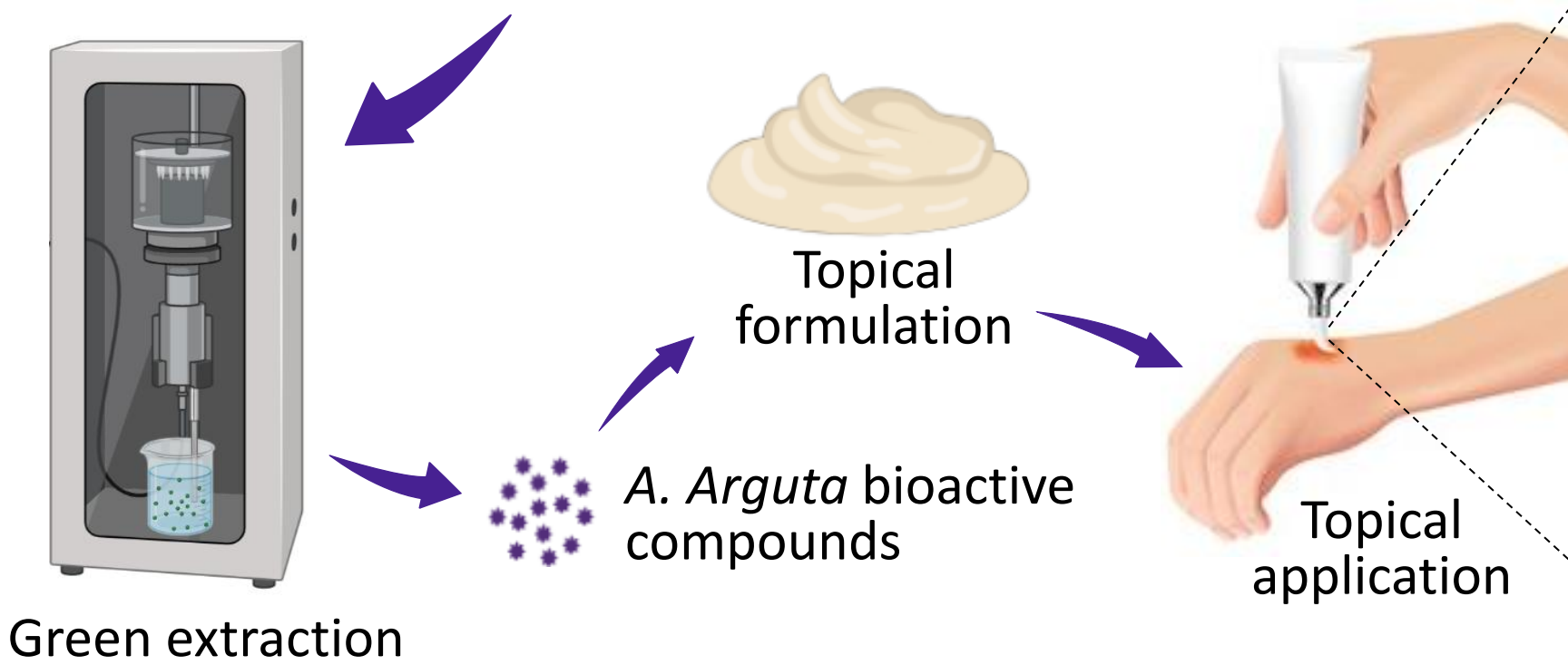
AIM

Actinidia arguta

- Perennial vine tree native of east-Asia
- Rich in phenolic acids, flavonoids and bioactive compounds
- Antioxidant, anti-inflammatory and anti-cancer properties
- Used in traditional medicine for thousands of years

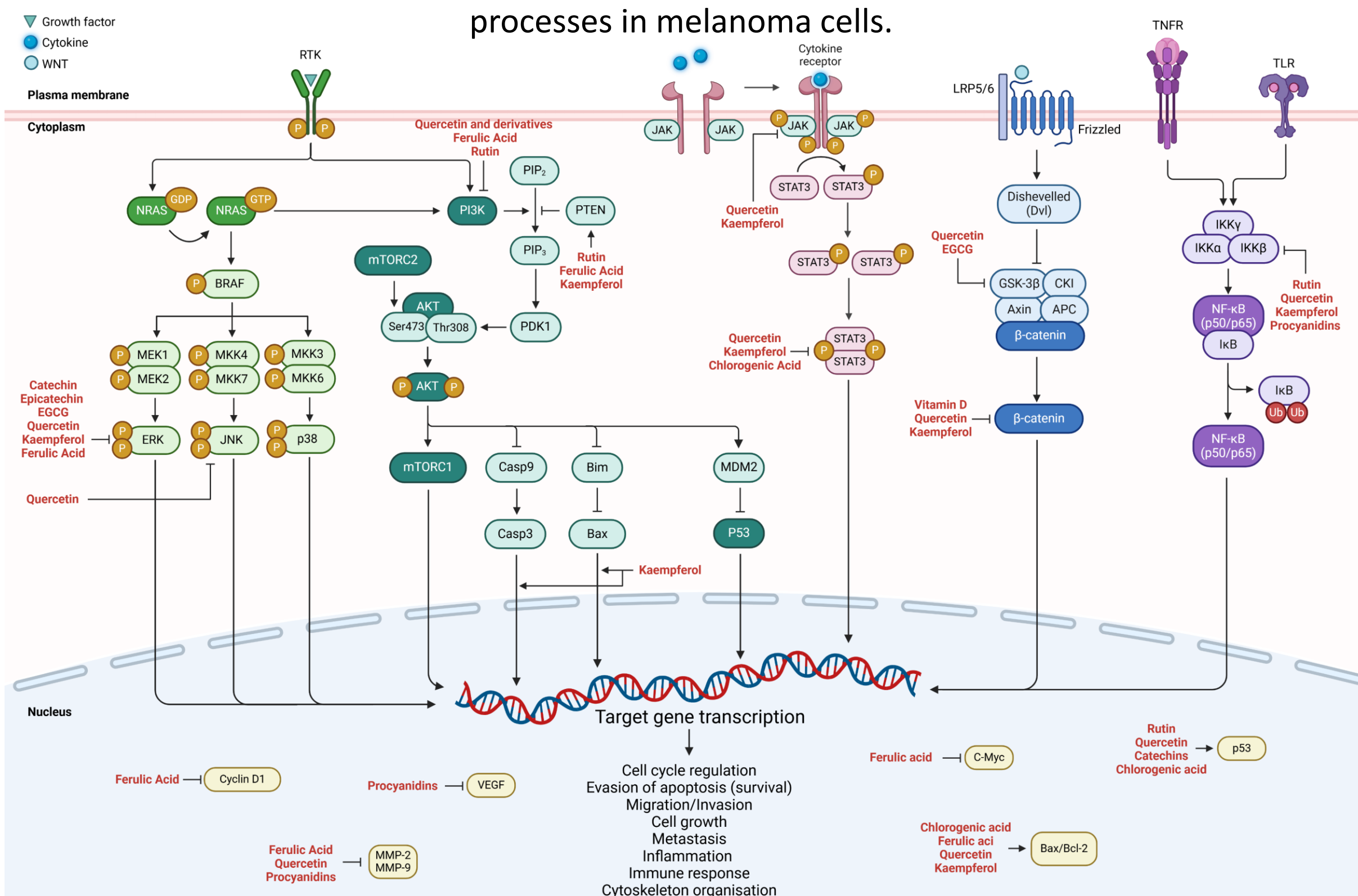


Potential activity of *A. arguta* bioactive compounds on altered signaling pathways in cutaneous melanoma? ???



EXPECTED RESULTS

A. arguta bioactive compounds, such as quercetin, catechin, kaempferol, chlorogenic acid, and rutin, may inhibit the abnormally activated signaling pathways and promote apoptotic processes in melanoma cells.



CONCLUSION

This study seeks to encourage the development of new cutaneous melanoma therapeutic strategies, more effective and less toxic, providing a glimmer of hope in the fight against this disease.

REFERENCES

- Guo, W., et al., *Signal pathways of melanoma and targeted therapy*. Signal Transduction and Targeted Therapy, 2021. **6**(1): p. 424.
- Algarin, Y.A., et al., *Advances in Topical Treatments of Cutaneous Malignancies*. American Journal of Clinical Dermatology, 2023. **24**(1): p. 69-80.
- Silva, A.M., et al., *Extraordinary composition of Actinidia arguta by-products as skin ingredients: A new challenge for cosmetic and medical skincare industries*. Trends in Food Science & Technology, 2021. **116**: p. 842-853.

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