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Determining the Dependency of Spy1 based on Rb Status

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Determining the Dependency of Spy1 based on Rb Status in Breast Cancer



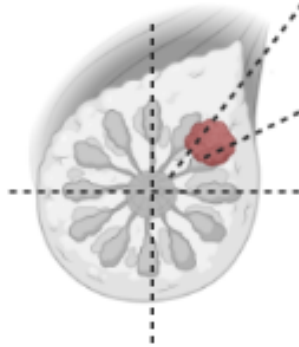
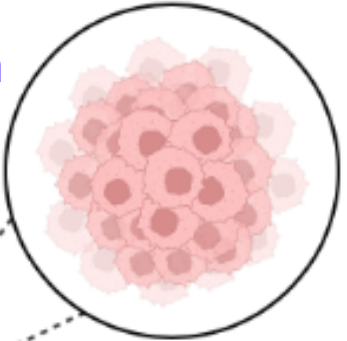
Tiana Visconti, Nick Philbin, Dr. Bre-Anne Fifield,
Dr. Lisa A. Porter

“ An incidence rate estimated to reach 3.2 million by 2050 ”



Breast Cancer

2nd most common cancer worldwide



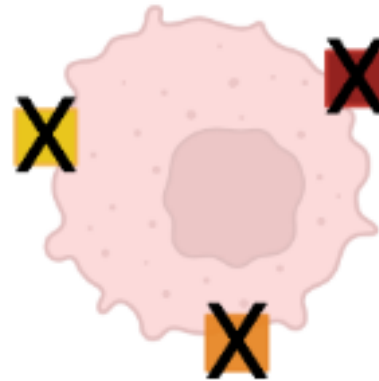
It is estimated that about 1 in 8 Canadian women will develop breast cancer during their lifetime and 1 in 34 will die from it

Triple Negative Breast Cancer (TNBC)

- Accounts for 15% of all breast cancers
- More common in younger women and those of African American descent

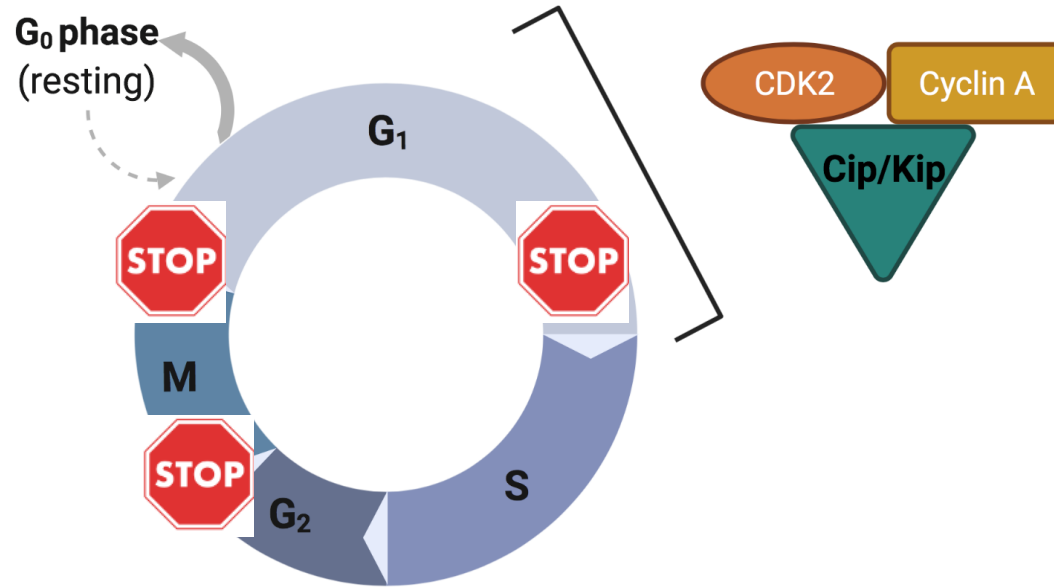


Hormone receptor positive cells



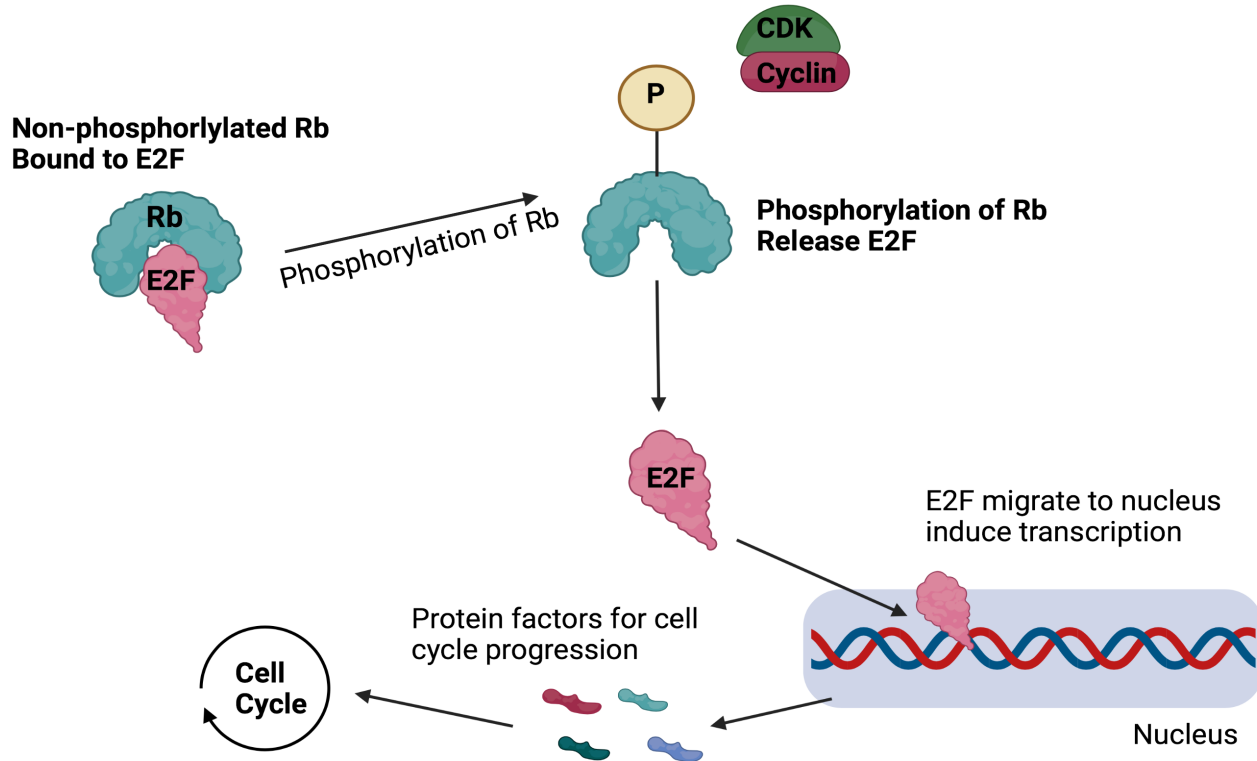
Triple negative breast cancer cells

Cell Cycle Dysregulation: A Hallmark of Cancer



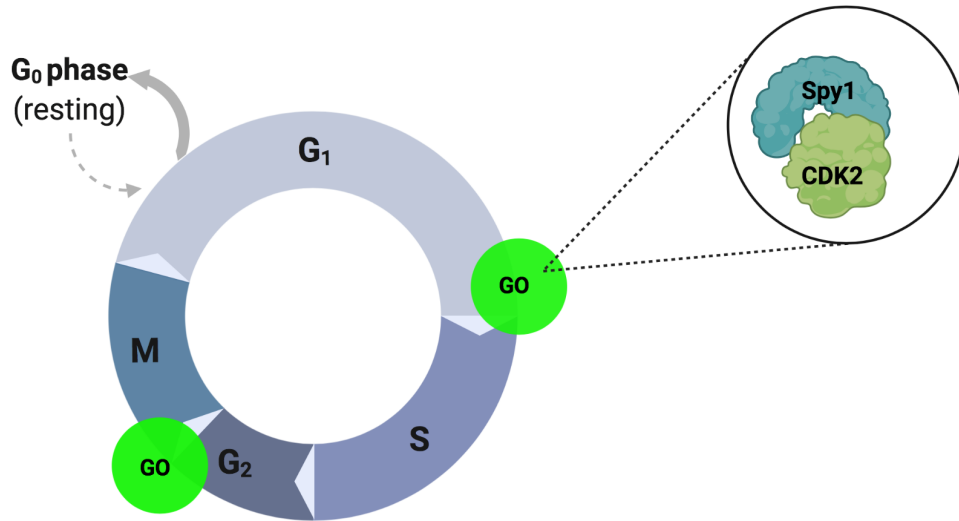
Genes that Regulate the DNA Damage Response

The Retinoblastoma Tumour Suppressor Gene



Can Spy1 promote increased susceptibility to breast cancer?

- **Spy1 levels are elevated in many cancers including human breast cancer**

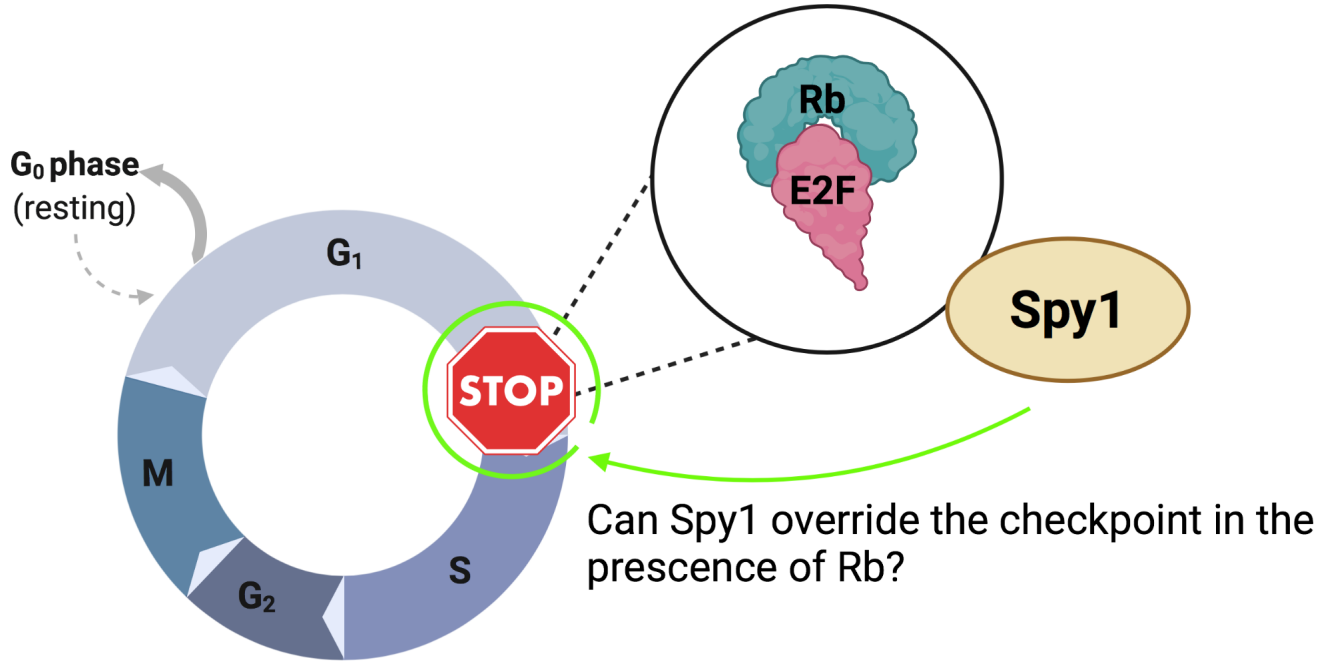


Overrides Checkpoints

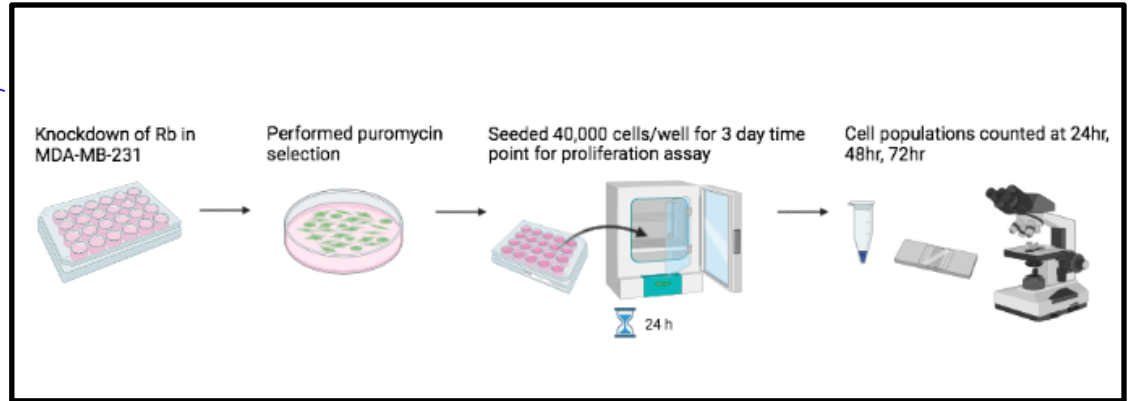
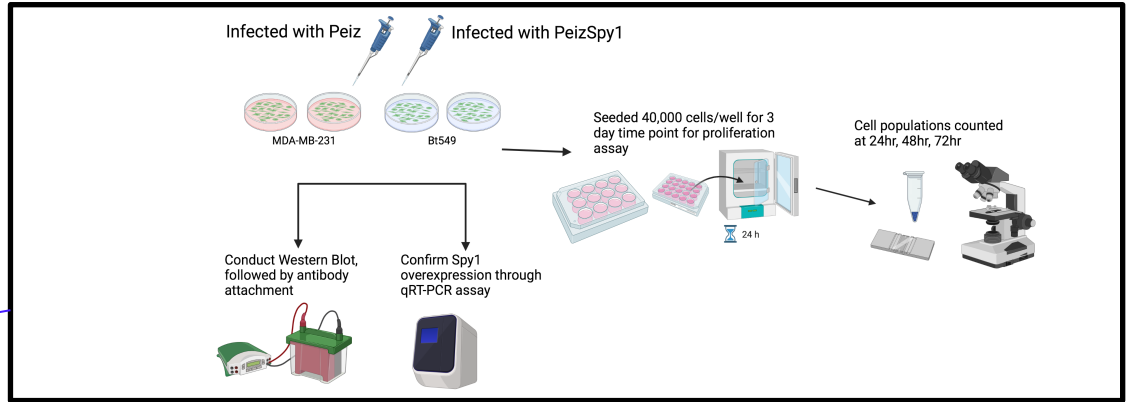
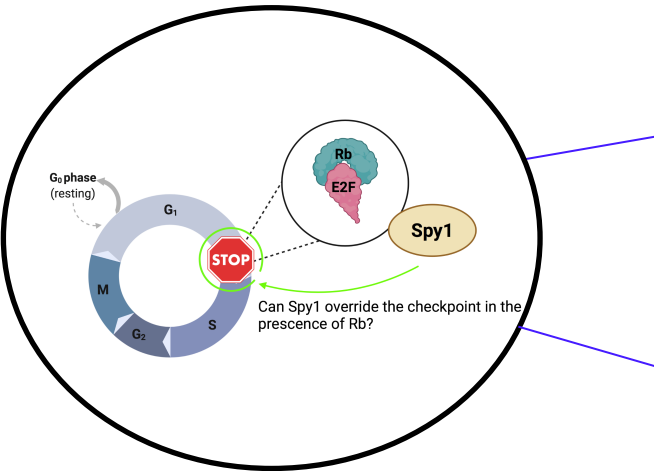
Bypasses DNA Damage

Increases Susceptibility to Cancer

Can Spy1 override checkpoints independently of Rb status, and does elevated levels of Spy1 alter this response?

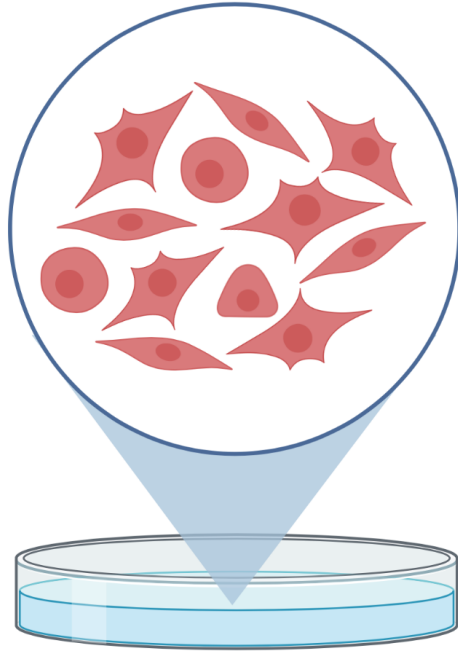


Can Spy1 override checkpoints independently of Rb status, and does elevated levels of Spy1 alter this response?



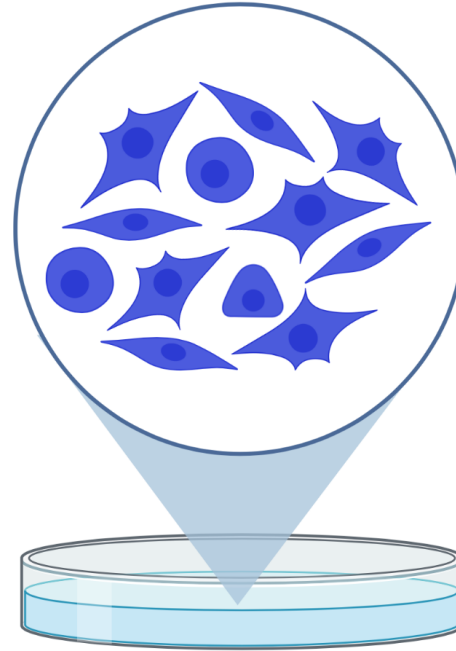
TNBC Cell Lines

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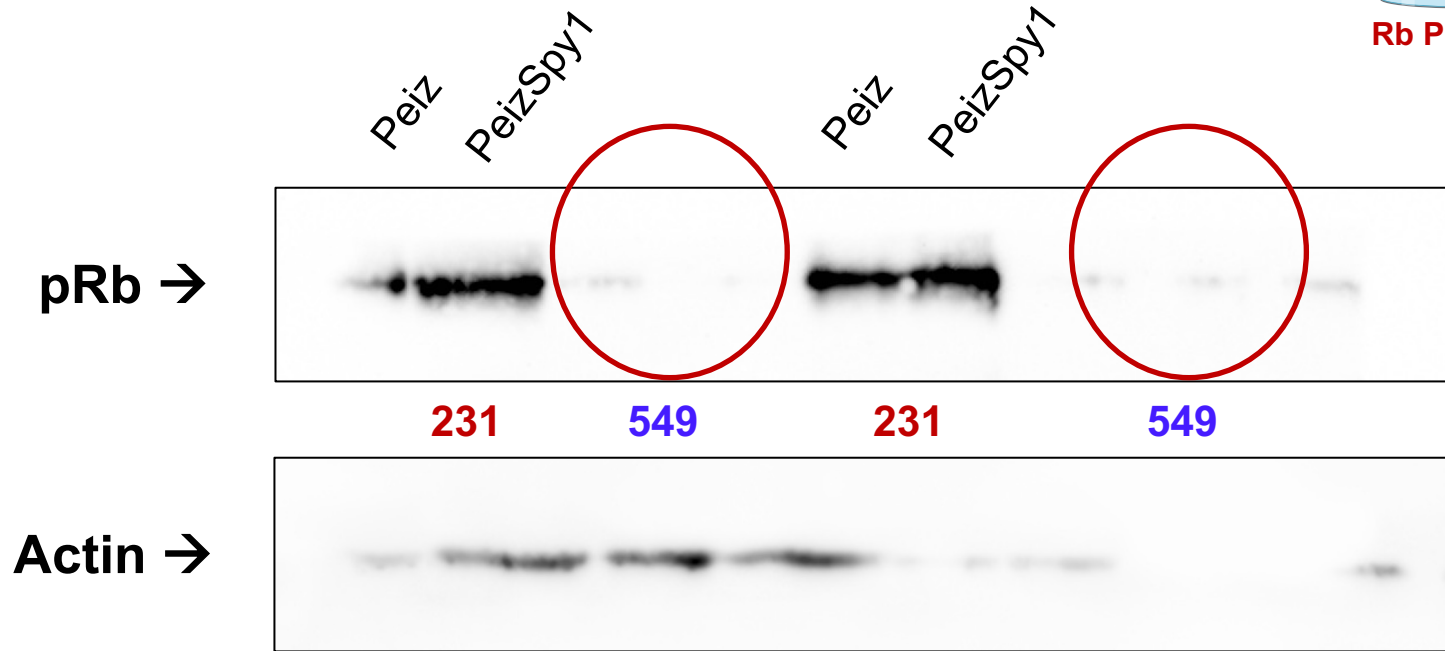
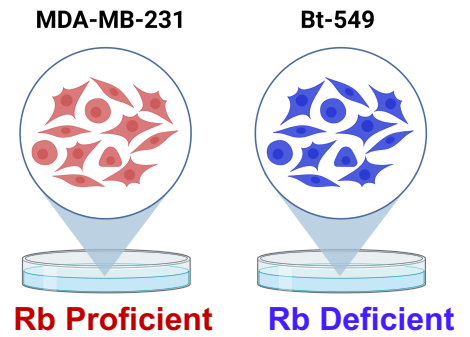
Rb Proficient

Bt-549



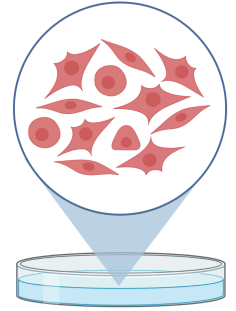
Rb Deficient

Is there a difference in the endogenous expression of Spy1?

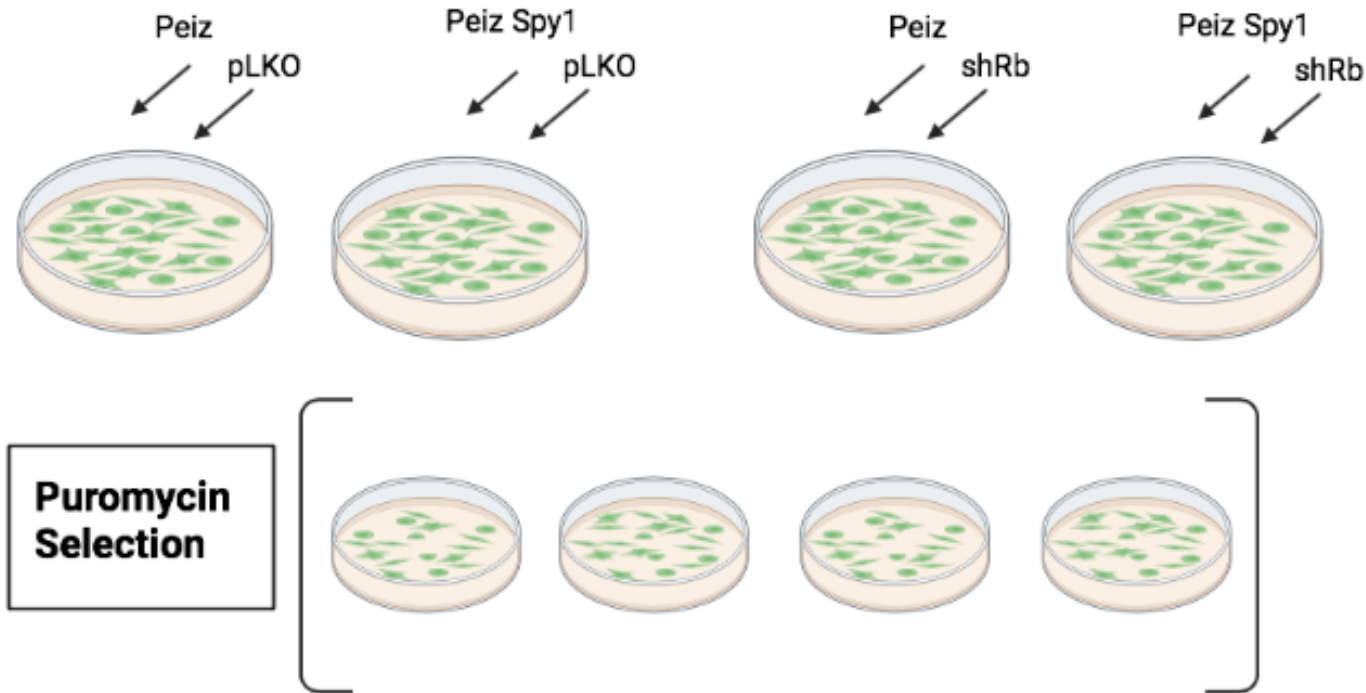


Determining the effects of manipulation on endogenous Rb levels on proliferative capabilities

MDA-MB-231

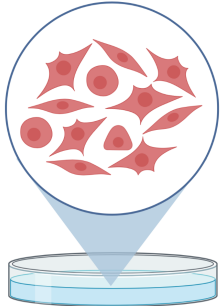


Rb Proficient

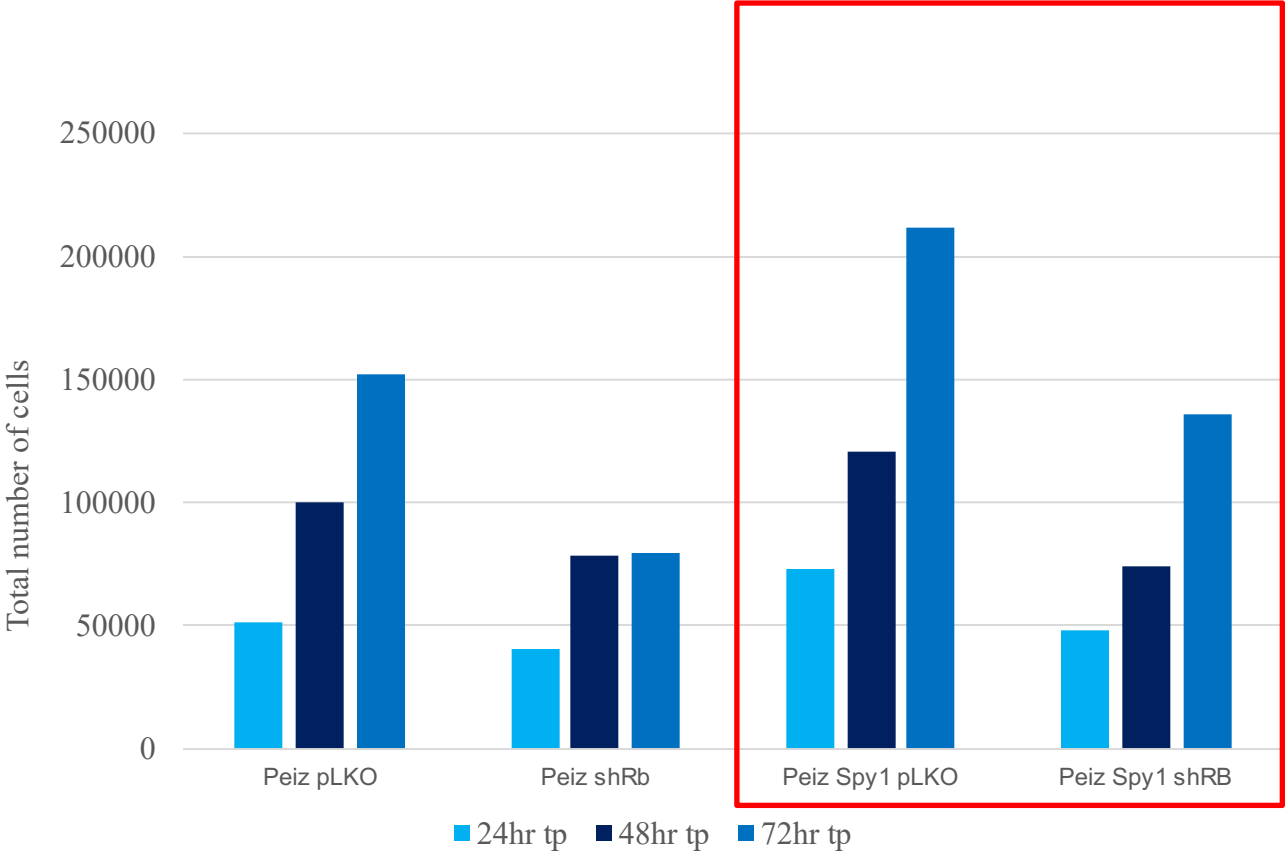


Does Spy1 rely on Rb to drive proliferation?

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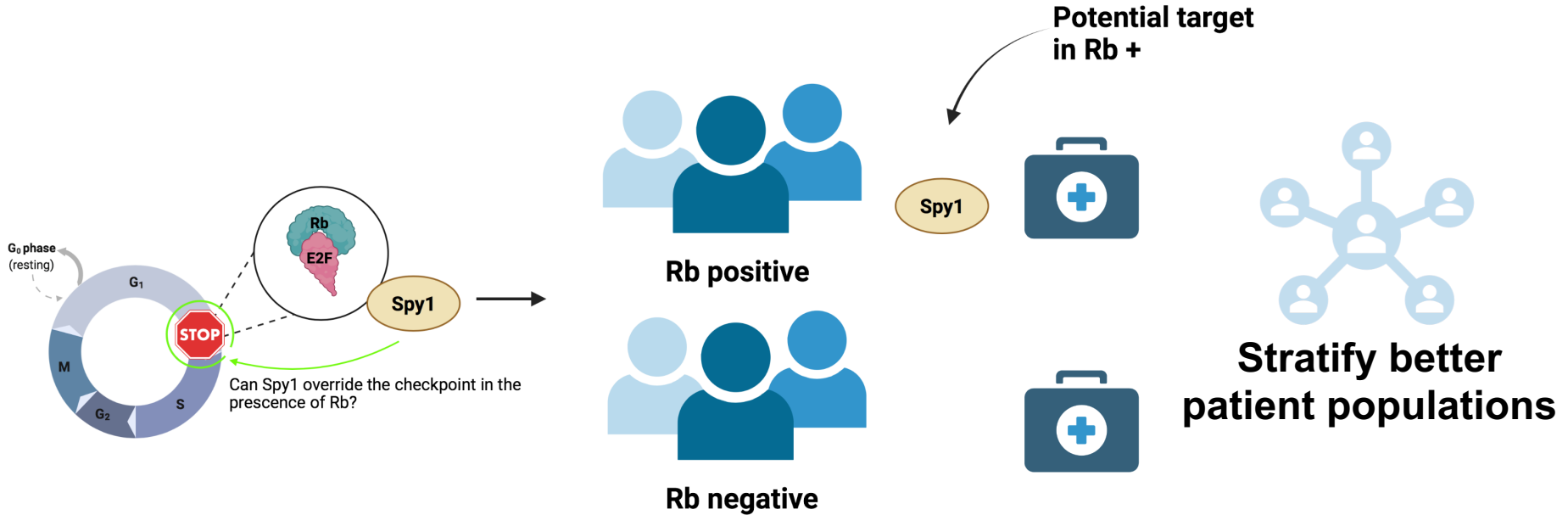
Rb Proficient





Spy1 could be used in developing cell cycle inhibition targeted therapies

Significance



Acknowledgements

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