

Localization of MxB to The Centrosome: Implication in Its Anti-HIV-1 Activity

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Introduction

Human Myxovirus Resistance Protein B (MxB)

- A dynamin-like GTPase.
- Type I interferon-inducible protein.
- Inhibits multiple RNA viruses and DNA viruses, including HIV-1, HCV, herpesviruses, and HBV.
- Exhibits a signature localization to the nuclear pore complex (NPC) on the nuclear envelope, which is associated with its antiviral function.

Research Question:

- How is MxB anchored to the NPC?

Results

Tracking the distribution of endogenous MxB during mitosis

Fig.1 Generating HeLa-based MxB-RFP knock-in cell line by CRISPR-Cas9 induced homogeneous

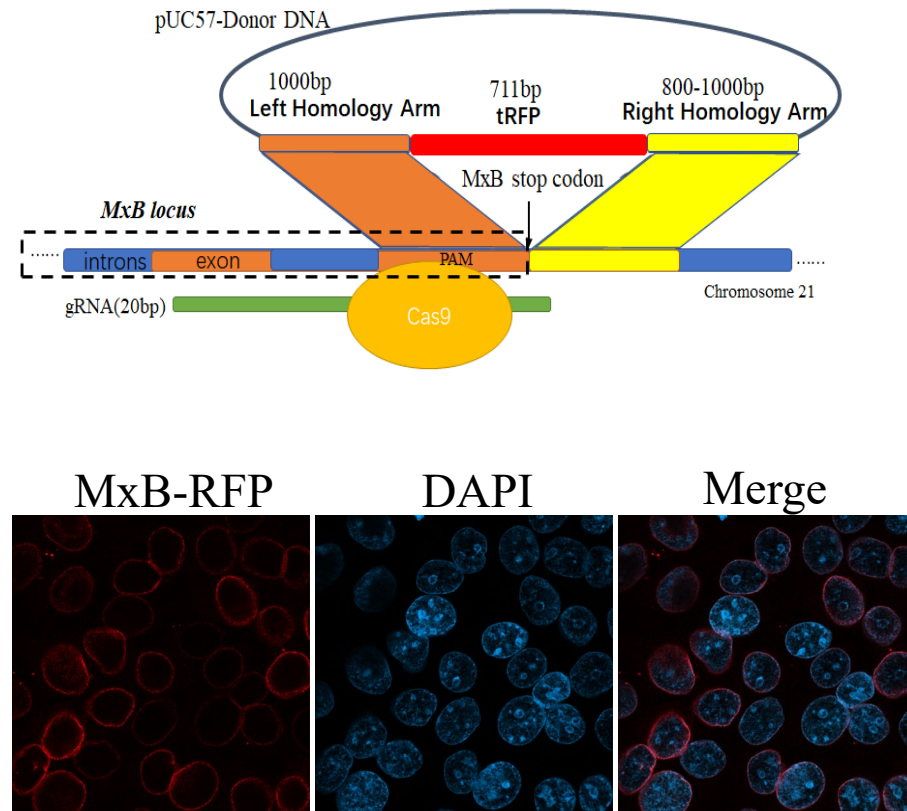
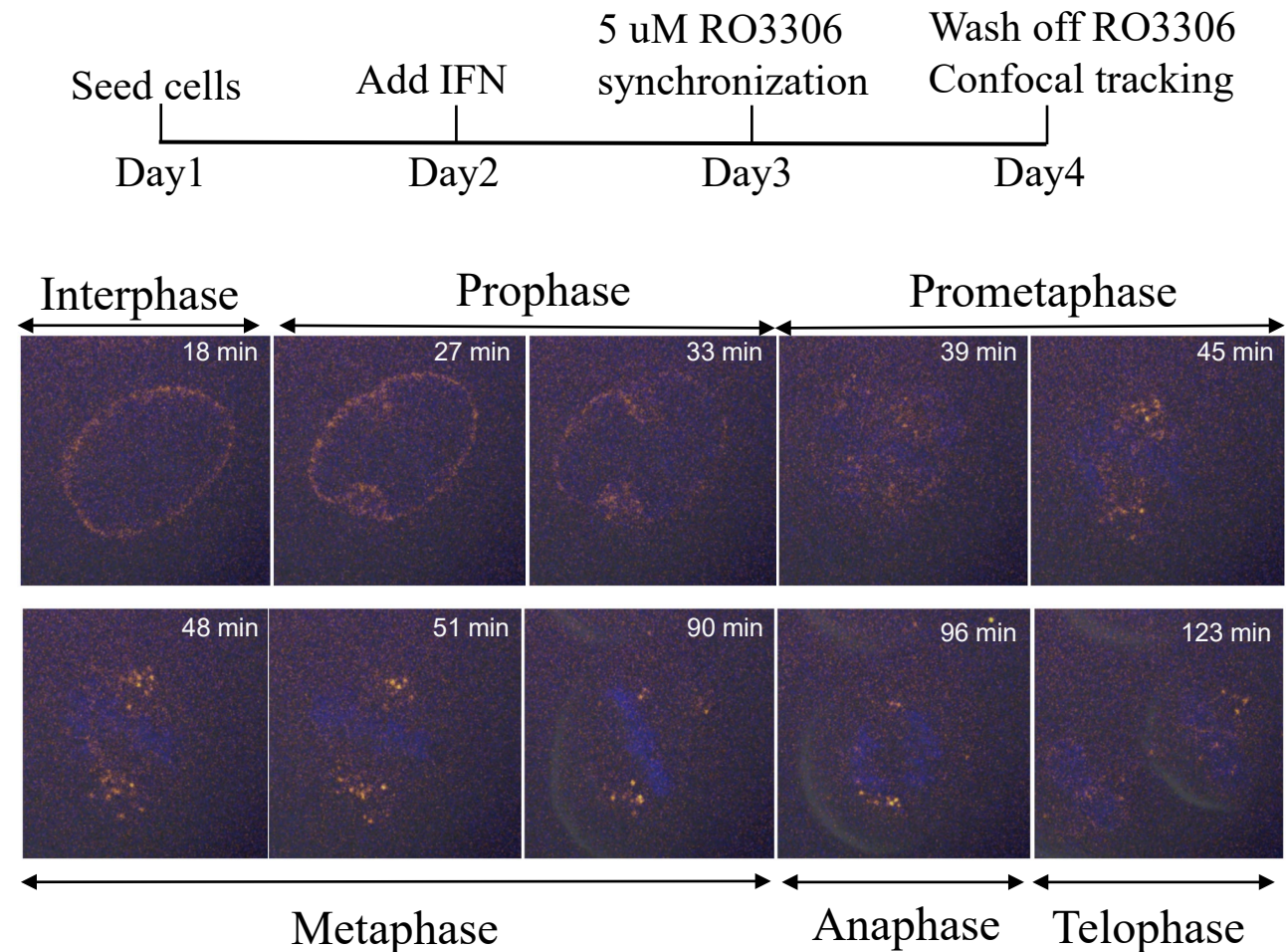
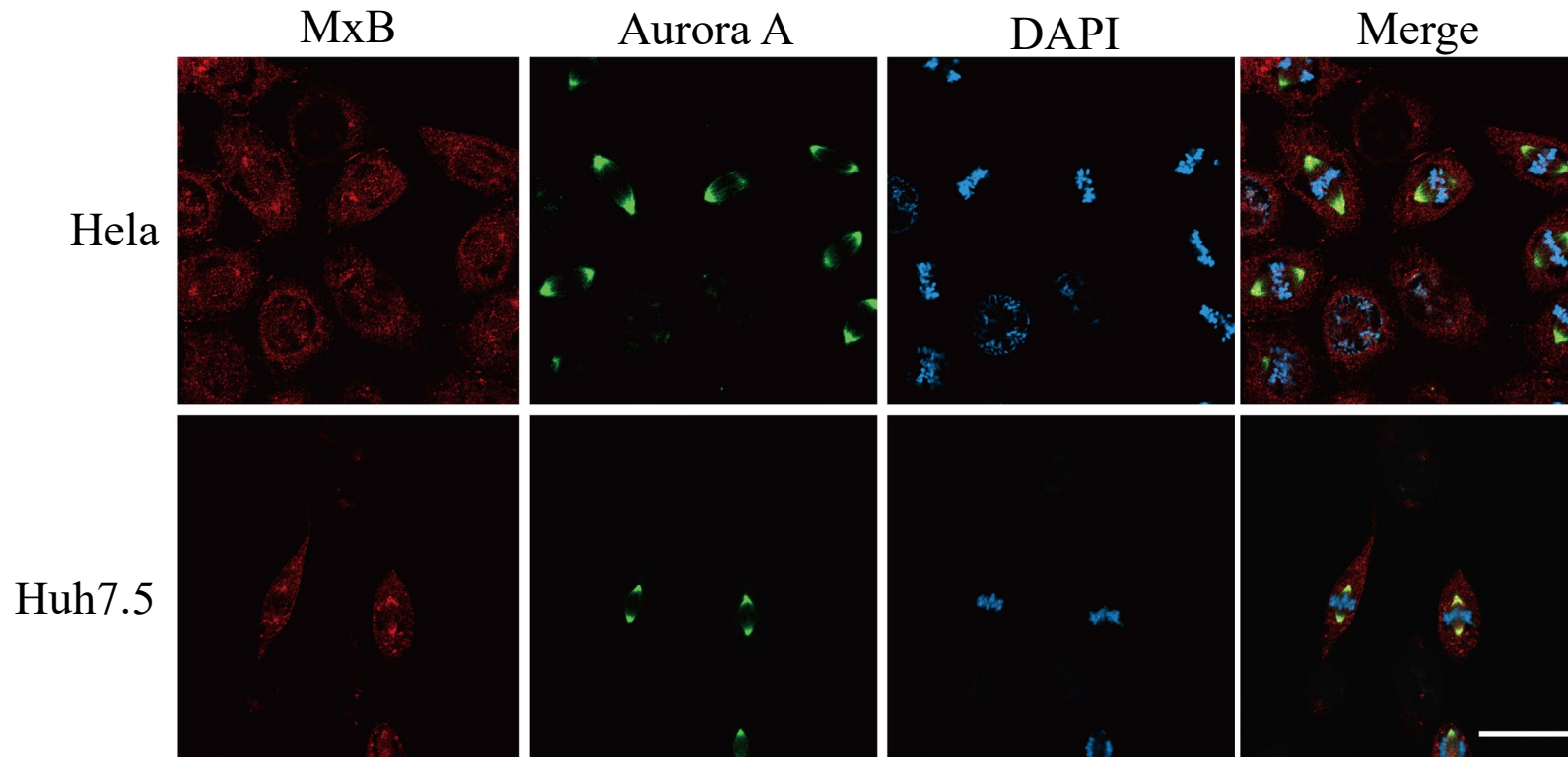
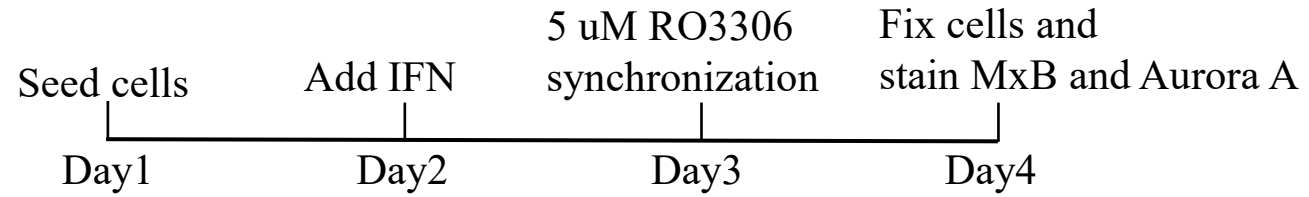


Fig.2 Live cell imaging to track MxB-RFP localization during mitosis



Results

Endogenous MxB is localized at the centrosomes during mitosis



Future Directions

- Which NPC proteins (nucleoporins) are also localized to centrosome?
- How does MxB affect the function of the centrosome as a microtubule-organizing center?
- What is the potential impact of MxB on the trafficking of viral DNA along microtubules?

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