

Targeting TRPM8: A Novel Strategy to Halt Androgen-Driven Invasiveness in Melanoma

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INTRODUCTION & AIM

Melanoma ranks among the most lethal cancers worldwide. Advanced-stage melanoma is treated with various therapeutic strategies, often accompanied by significant side effects. Recent advancements in targeted therapies, particularly those aimed at receptor tyrosine kinases and immune checkpoints, have substantially improved overall survival (OS) and long-term disease control. However, resistance mechanisms frequently develop, leading to disease progression. Consequently, the need for alternative therapeutic approaches for advanced melanoma remains pressing. The transient receptor potential melastatin-8 (TRPM8) channel has emerged as a promising molecular target implicated in the migration and proliferation of malignant cells. However, its specific role in melanoma progression remains unclear.

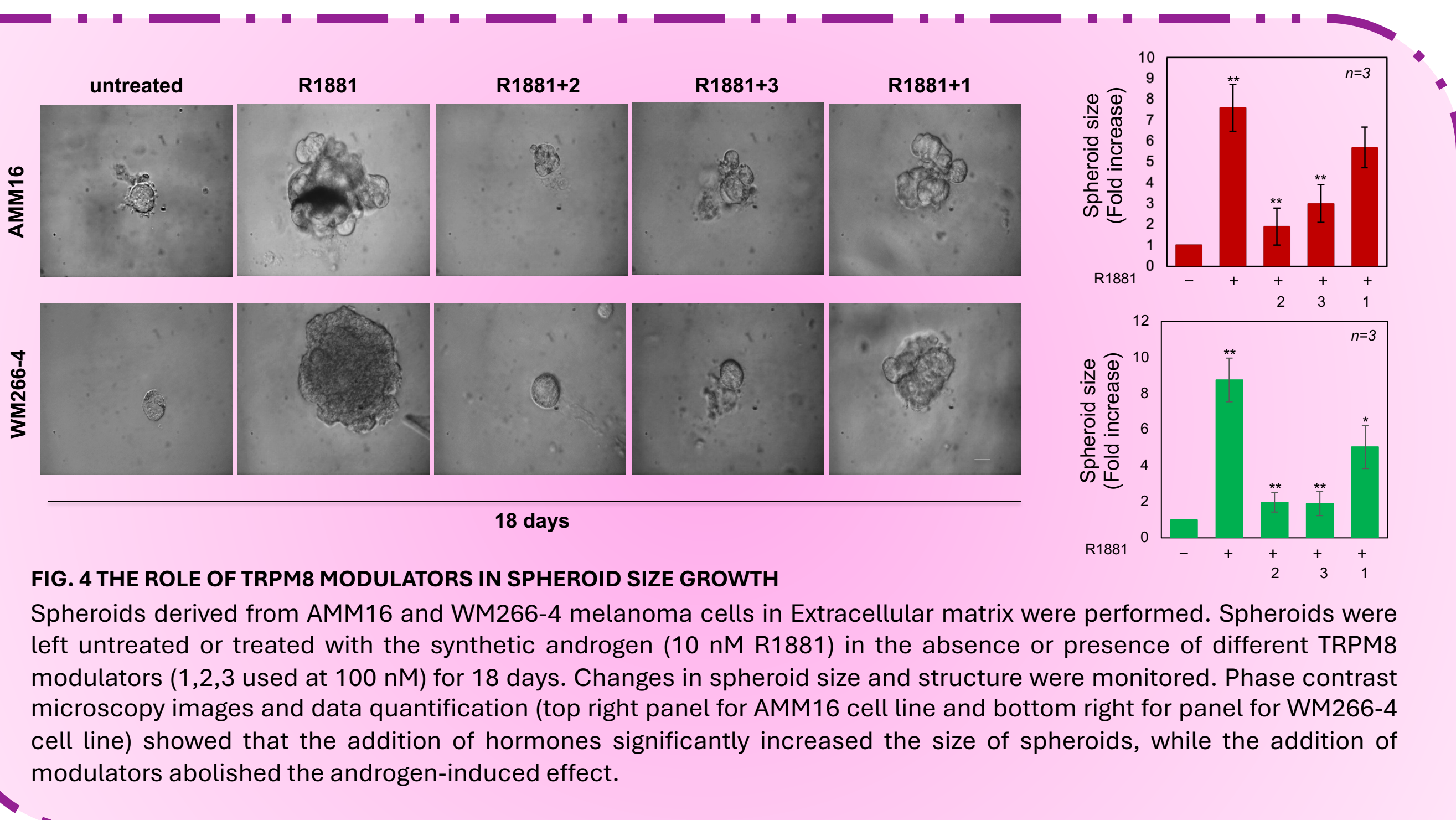
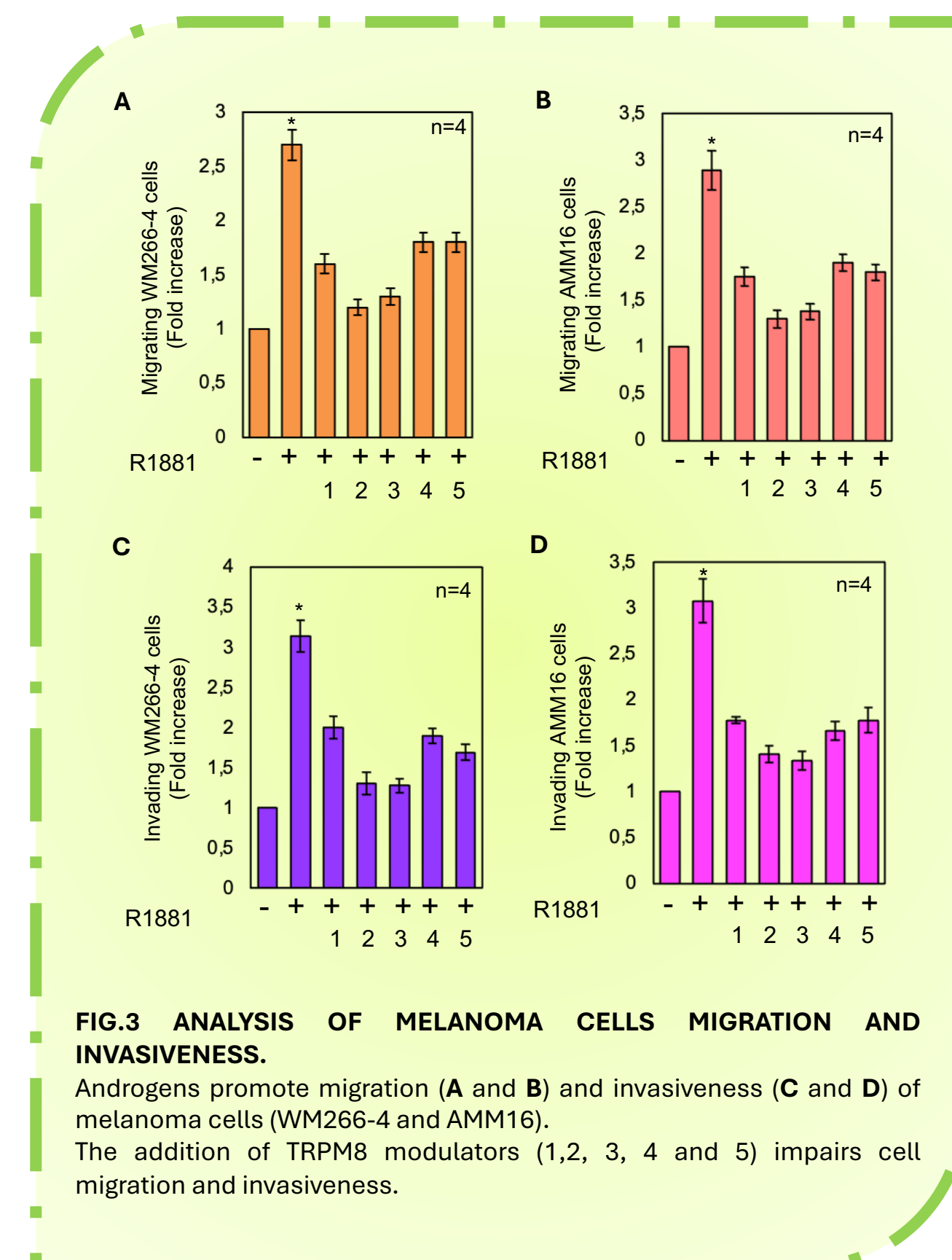
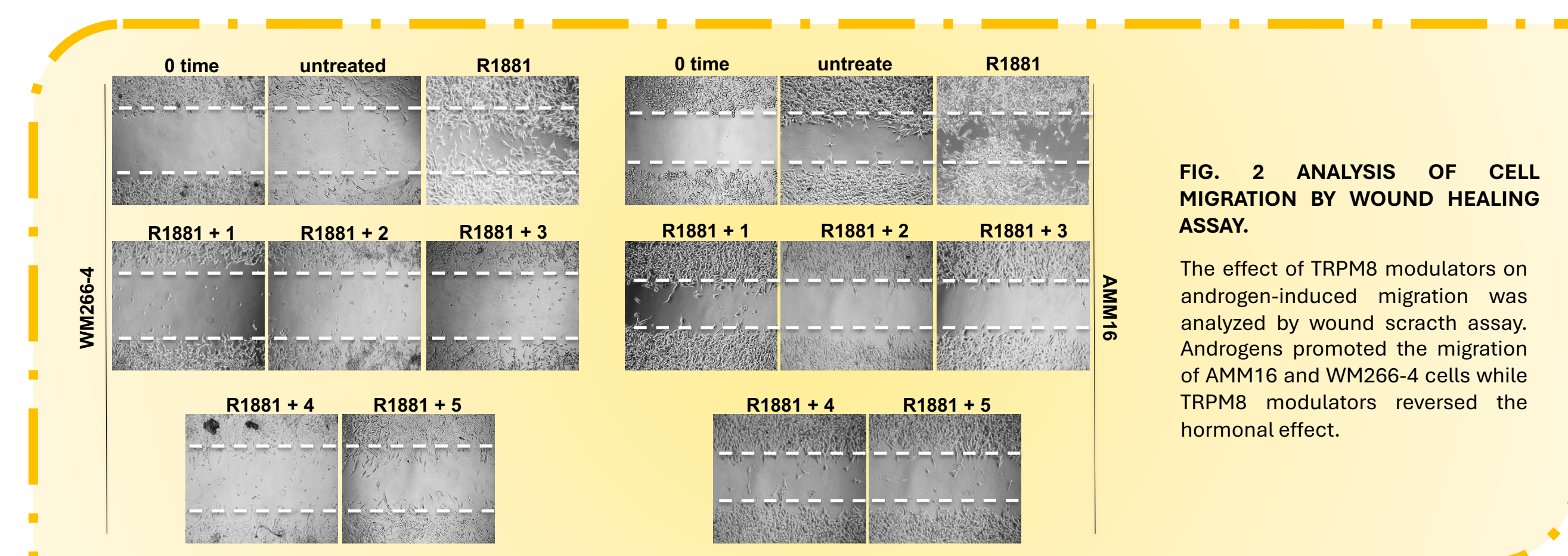
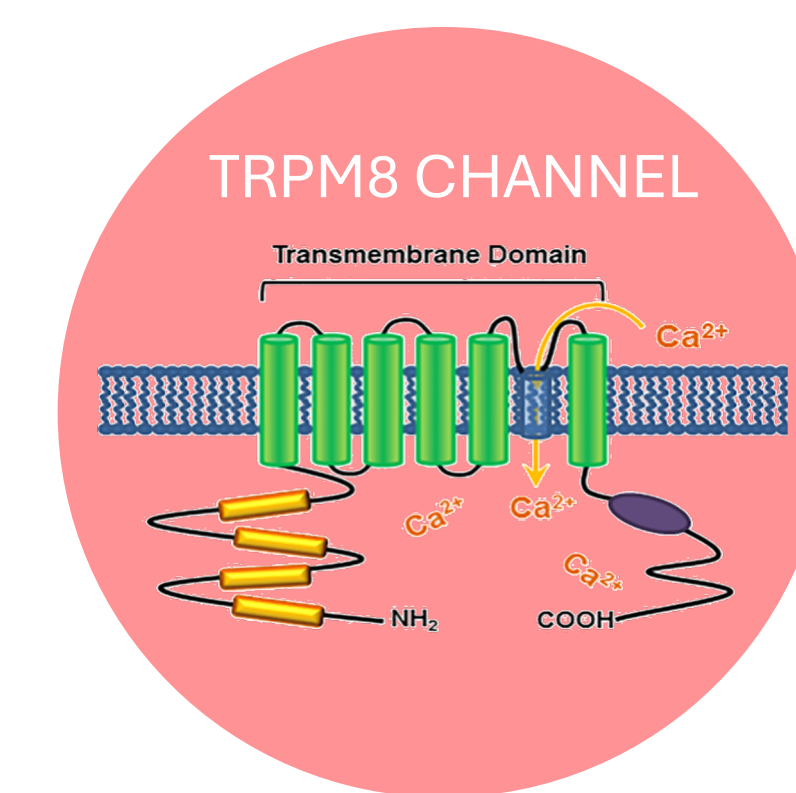
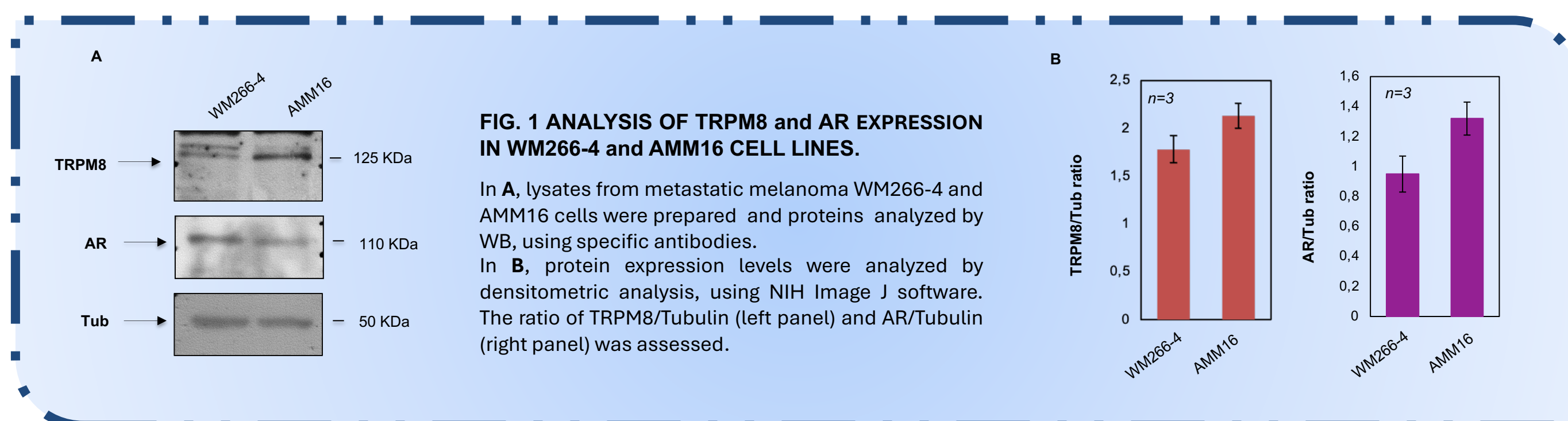
This study aims to investigate the effects of novel TRPM8 modulators on androgen-induced migration, invasiveness, and spheroid growth in melanoma cells.

METHOD

Melanoma cell lines with varying malignancy degrees were treated with or without androgens in the presence or absence of newly synthesized TRPM8 modulators.

Wound scratch and Boyden's chambers analysis were performed to evaluate cell migration and invasion. The most effective compounds were further tested in melanoma 3D spheroid models.

RESULTS & DISCUSSION



CONCLUSION

These preclinical findings highlight TRPM8 as a promising therapeutic target in melanoma, offering potential for innovative treatment strategies to overcome limitations in current therapies.

FUTURE WORK / REFERENCES

Based on these results, the next step will be to investigate the link between AR and TRPM8.