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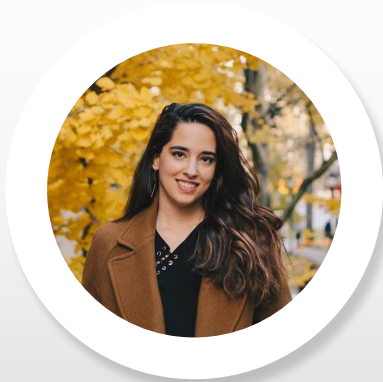
## The potential of BRAF-targeted therapy combined with immunotherapy in melanoma

**S**tatement of the Problem: Advanced melanoma involves metastasis to distant sites and is associated with poor long-term survival (Fisher et al., 2012). Current treatment options for melanoma include interleukin 2, targeted therapy (BRAFi, MEKi) and immunotherapy (CTLA4 antibody, PD1/PDL1 antibody). While targeted therapeutics can successfully block oncogenic signaling with high clinical response, they result in high relapse rates due to acquired resistance. Furthermore, while immunotherapeutics can induce durable responses, they have lower response rates due to immune evasion and suppression of effector function in tumour microenvironment. The purpose of this study is to discuss the potential for combining immunotherapy and targeted therapy with the goal of achieving high response rates with prolonged duration. Methodology & Theoretical Orientation: To obtain these results, various search terms such as immunotherapy and targeted therapy were utilized. Furthermore, the articles were selected based on recency of publication as well as depth of detail regarding the specific immunologic mechanisms by which combination therapies exert their effects. Findings: The results show that potential mechanisms of combinatorial activity of immunotherapy and targeted therapy include increasing antigen presentation, as well as improved lymphocyte homing and function. Yet it is important to note that long-term consequences of combinatorial therapeutics are uncertain, and clinical trials of combinations have resulted in adverse effects such as hepatotoxicity and intestinal perforation. Conclusion & Significance: Altogether, these results indicate a potential combination for BRAF-targeted therapy and immunotherapy in achieving long-term durable responses.

### Biography

Sheida Naderi-Azad has completed her Bachelor of Science in Microbial and Environmental Pathophysiology from University of British Columbia and is currently an MD Candidate at the University of Toronto Faculty of Medicine. She has an expertise in immunodermatology, with a deep interest in melanoma immunotherapeutics, primary immunodeficiency diseases such as atopic dermatitis, and autoimmune conditions such as psoriasis. She has most recently completed a summer studentship at the Melanoma Clinic, Massachusetts General Hospital. She has had numerous published articles and presentations on melanoma therapeutics, anti-inflammatory conditions and dermatologic comorbidities such as mood disorders.

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