



# DETERMINATION OF TUMOR ASSOCIATED ANTIGENS IN PATIENTS WITH MALIGNANT MELANOMA

**Mehmet KARACAY**

0000-0002-5301-6626

**BURSA ULUDAĞ UNIVERSITY**  
**GRADUATE SCHOOL OF HEALTH SCIENCES**  
**MEDICINE-IMMUNOLOGY DEPARTMENT**  
**PHD PROGRAM**  
**GRADUATION DATE: 18.07.2023**

## SUPERVISOR

Haluk Barbaros ORAL, Professor, MD, PhD  
0000-0003-0463-6818  
BURSA ULUDAĞ UNIVERSITY  
GRADUATE SCHOOL OF HEALTH SCIENCES  
MEDICINE-IMMUNOLOGY DEPARTMENT  
BURSA – TÜRKİYE

## THESIS ABSTRACT

The insufficient anti-tumor immune responses due to the suppressive tumor microenvironment have led to increased cancer-related mortality. To achieve an effective treatment approach, it is crucial to identify the antigen specificities within a diverse patient population in advance.

Therefore, our study aims to identify intracellular antigens that demonstrate similarities and commonalities in different subgroups and stages of Malignant Melanoma. Tissue samples from melanoma patients were analyzed for the expression levels of MART-1, HMB-45, TYR, TRP-1, TRP-2, MAGE-A, MAGE-C1, and NY-ESO-1 antigens, which have been previously associated with melanoma in the literature. Both *in situ* and invasive areas of the melanoma tissues were investigated.

## APPLICATION AREAS OF THE THESIS RESULTS

As a result of the study, it was observed that HMB-45, MAGE-A, and MAGE-C1 antigens were significantly and similarly overexpressed in both *in situ* and invasive areas of melanoma tissues, as well as in all subgroups and stages, when compared to control groups of patients. Subsequently, the study suggests that TCR-NK-based immunotherapy approaches targeting HMB-45, MAGE-A, and MAGE-C1 antigens could lead to effective anti-tumor immune responses, better control of metastases, and a reduction in melanoma-related deaths. These findings propose a potential therapeutic strategy to enhance immune responses against melanoma, thereby holding promise for improving patient outcomes.

## ACADEMIC ACTIVITIES

Karacay, M. Yilmaz, H. Aras, M. Celik, E. Dakiki-Korucu, B. Yazici, S. Bulbul-Baskan, E. Evrensel, T. Kahveci, R. Balaban-Adim, S. Yoyen-Ermis, D. Sutlu, T. Oral, H B. (2022). Determination of The Tumor-Associated Antigens in Cutaneous Melanoma, 5. International Immunology & Immunogenetic Congress (MIMIC), 20-22 October, Sabancı Culture Palace, Izmir, TURKIYE.

## KEY WORDS

- ✓ Malignant melanoma
- ✓ Tumor Associated Antigens
- ✓ Immunohistochemistry
- ✓ Adoptive cell therapy
- ✓ Tumor Immunology

## CONTACT

E-MAIL:  
mehmetkray@gmail.com

## THESIS SUPERVISOR

TELEPHONE:  
+90 (0224) 295 41 14

E-MAIL:  
oralb@uludag.edu.tr

