

Detection of Antigen Presentation as Companion Diagnostic for Immuno-oncology (P-1203)

Key facts

- Simple method for detection of MHC-restricted antigen presentation necessary for successful immune-based cancer therapies
- Suitable for routine paraffin-embedded tissue material
- Based on proximity ligation assay (PLA)

Abstract

Efficient processing and surface expression of tumor antigens are a prerequisite for successful immune-based cancer therapies. Unfortunately, spatial distribution of antigens is very difficult to determine with standard histological techniques. So cells might harbor tumor antigens inside the cytoplasm, but lack the appropriate MHC I or MHC II presentation on their cell surface. The current invention discloses a simple method to determine MHC-restricted presentation of any antigen of interest on the cell surface.

Development Stage

The technology has been used successfully to determine MHC II-restricted presentation of tumor antigens IDH1R132H and NY-ESO-1 in tumor cells and human tumor tissue.

The Technology

The method is based on the proximity ligation assay and can be used on standard paraffin-embedded tissue samples with routine laboratory equipment.

Applications and Commercial Opportunity

The method can be used to determine MHC-restricted presentation of any antigen of interest on the cell surface. So DKFZ is looking for commercial partners who would like to use this test as a companion diagnostic for e.g. immune-based tumor therapies.

Inventors

The investigators are: Schuhmacher T., Bunse L., Sahm F., Wick W., and Platten M.

Intellectual Property

A European patent application has been filed: EP 14190538.0, priority date 27.10.2014

Further Information

No other public information is currently available, but further information (speaking with the inventor) is avail-

able under a signed Confidential Disclosure Agreement (CDA).

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References:

Proximity ligation assay evaluates IDH1R132H presentation in gliomas. Bunse L. et al. [J Clin Invest. 2015 Feb;125\(2\):593-606](https://doi.org/10.1007/s00432-015-0606-6)

Figure:

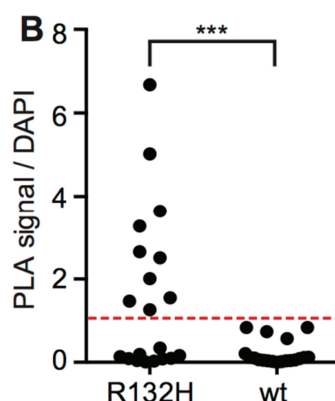


Figure shows IDH1R132H antigen - MHC class II co-localization in IDH1R132H+ (left panel) and IDH1wt glioma tissue (right panel). A PLA signal/DAPI ratio > 1 indicates co-localization