305 Anti-CD133 Monoclonal Antibodies as Cancer Therapeutics

Asset Overview

Product Type	Antibody
Indication	Oncology (reagents for WB, ELISA, flow cytometry, immunoprecipitation)
Current Stage	Lead identification/optimization
Target(MoA)	Anti-CD133 Monoclonal Antibodies
Brief Description	• Developed a rabbit monoclonal antibody that recognizes the marker for CD133 and is useful in pharmacodynamic testing to inform targeted anti-cancer chemotherapy development and clinical monitoring • CD133 is a cell surface glycoprotein used as a marker and expressed in stem cells such as hematopoietic stem cells, endothelial progenitor cells and neural stem cells • The resulting antibodies recognize both glycosylated and non-glycosylated regions of the cognate antigen • The inventors have demonstrated the utility of this invention in immunofluorescence assay, western blotting and ELISA, flow cytometry, and immunoprecipitation
Organization	National Institutes of Health

Differentiation

□ **Competitive landscape**

- Bispecific mAb for CD133 and CD3 (Wuhan YZY Biopharma): colorectal cancer, preclinical
- Bispecific mAb for CD133 and EGFRvIII (Stanford university): glioblastoma multiforme, preclinical (patent filed in 2009)
- Fusion protein dCD133KDEL for CD133 (University of Kansas): solid tumors, preclinical, targeting both glycosylated and unglycosylated forms of CD133 (patent filed in 2010, PCT/US2010/059827)

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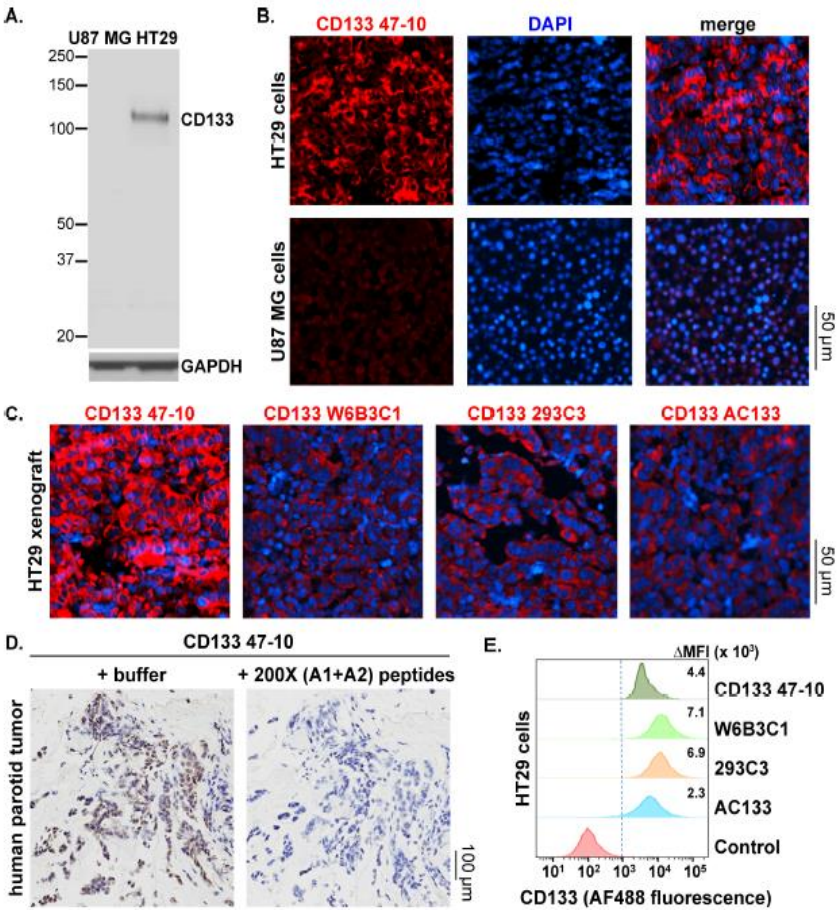
Key Data

Comparison of novel and commercially available anti-CD133 Antibodies in immunofluorescence microscope and flow cytometry application



3 commercially available anti-CD133 monoclonal antibodies that have been used for analysis of clinical specimens: clones W6B3C1, 293C3, and AC133 from Miltenyi Biotec

A-C) The anti-CD133 antibody successfully detected CD133 in HT29 but not U87 MG cells and produced the expected plasma membrane staining pattern in HT29 cells and xenograft tumor tissue

C) in immunofluorescence microscopy experiments, yielding a stronger fluorescence signal relative to the latter reagents when used at identical concentrations

E) the intensity of the fluorescence signal was slightly lower for CD133 47-10 compared to the commercial antibodies in this experiment

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Intellectual Property

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