nature research

https://doi.org/10.1038/s41571-020-0427-6

## Supplementary information

# CAR T cell therapies for patients with multiple myeloma

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## Supplementary table 1. Antigens under investigation

| Antigen | Expression in nonmalignant cells | Expression on MM cells | Preclinical Studies | Clinical trial | REFs |
|---|---|---|---|---|---|
| CD44v6 | Activated T cells, monocytes and keratinocytes | Expressed in half of all patients with advanced-stage MM | No | Yes | 1–3 |
| CD70 | Activated T cells and lymphoid tissues | Heterogeneous expression in a subset of patients with MM | No | No | 4,5 |
| CD56 | NK cells, T cells, dendritic cells, monocytes, neuronal cells and skeletal muscle | Expressed in the majority of patients with MM | No | Yes | 6–12 |
| CD38 | Precursor B-cells, plasma cells, T cells, NK cells, myeloid precursors, prostate cells, neurons, astrocytes, microglia, osteoclasts and muscle cells | Strong expression across almost all patients with MM | No | Yes | 13–15 |
| CD138 | Plasma cells, salivary glands, liver and skin | Expressed almost universally on MM cells | Yes | Yes | 16–18 |
| CD19 | B cells | Minimal expression of CD19 on MM plasma cell surfaces; $CD19^+$ cells might be MM cancer stem cells | Yes | Yes | 19–22 |
| Immunoglobulin κ light chain | Mature B cells | Potential target on B cells that might be MM stem cells and that express cell surface immunoglobulins | Yes | Yes | 23,24 |
| SLAMF7 | Plasma cells, NK cells, $CD8^+$ T cells, activated monocytes and dendritic cells | Strongly and uniformly expressed by almost all MM cells | Yes | Yes | 25,26 |
| BCMA | Plasma cells and a small subset | Heterogeneously expressed on MM cells | Yes | Yes | 27–33 |

| | | | | | |
|---|---|---|---|---|---|
| | of B cells | | | | |
| GPRC5D | Hair follicles | Expressed on MM cells in bone marrow | Yes | Yes | 34 |
| NKG2D | NK T cells and subsets of $CD8^+$ and $CD4^+$ T cells | Expressed on MM cells | Yes | Yes | 35–37 |
| LewisY | Early myeloid progenitor cells | Heterogeneously expressed on MM cells | Yes | Yes | 38–41 |
| TACI | Plasma cells, a subset of B cells and activated T cells. | Expressed on MM cells | Yes | Yes | 42–45 |
| CD229 | T cells, B cells, NK cells and dendritic cells. | Homogeneous expression on MM cells | Yes | No | 46 |
| Activated Integrin β7 | Subset of B cells | Expressed on MM cells | Yes | No | 47 |

MM, multiple myeloma; NK, natural killer.


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