

Antigen presenting cells (Call, 2013)

- Most nucleated cells express at least some of the MHC proteins required to present antigens to T-cells. This enables all cells with the potential to become targets of the immune response when damaged or infected. (Antigen-presenting cells)
- The mechanism by which an antigen triggers an adaptive immune response involves several steps.

captured → processed → presented to T-cells

antigenic particles

- However, only a select subset of hematopoietic lineage cells possess the specialised machinery required to efficiently activate prime naive T cells (not memory cells, immunologically naive until the time they encounter MHC-peptide complexes for which their T-cell receptors have high affinity, Berard Tough, 2002) to initiate a new adaptive immune response.

- These cells are known as professional APCs, there are three types: macrophages, dendritic cells, B-lymphocytes. They perform 4 major functions:

- 1) Monitoring the intracellular ^{and extracellular} environment for potentially antigenic molecules.
- 2) Provide critical accessory signals that enable T-cells to become fully activated.