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Sommario/riassunto	<p>The activation of adaptive immune responses requires the processing and presentation of protein antigens to lymphocytes. Especially dendritic cells are effective at display of antigen-derived peptides in the form of immunogenic peptide/MHC complexes to CD4 and CD8-positive T cells, and can stimulate even naive T cells to clonally expand. During the last 40 years, mechanisms that facilitate antigen processing and presentation were clarified, mostly from work in cell lines and mouse models. From mouse-based work, it is now clear that dendritic cells represent a collection of specialized cell subsets that are particularly well endowed to stimulate antigen transport to distinct tissue locations, to transfer antigens between cellular subsets or to trigger T cell responses. Dendritic cell subsets hold great promise for therapeutic application, for example as dendritic cell-based vaccines to bolster immune responses against viruses or malignant growths. Hurdles remain that preclude the efficient application of high quality pre-clinical research into standardized patient care. In this research topic, efforts in dendritic cell research and dendritic cell-based vaccines are discussed, from both pre-clinical and application points of view.</p>