

Interplay between innate and adaptive systems

Description

As mentioned above, T-cell's functions are dependent on their physical interaction with other cells: they need to recognize antigens associated with MHC molecules on the cell surface. However, the modulation of the signal is dictated by secondary interactions involving molecules induced in APCs as the consequence of a previous antigen encounter (co-stimulators), and by the signaling of secreted cytokines. These features ensure the adaptability and the amplification of the adaptive immune response. The expression profile of co-stimulatory molecules in resting APCs is limited, thus they cannot efficiently stimulate naïve T lymphocytes. During the innate immune response, following antigens internalization and cytokines release, APCs produce co-stimulatory molecules such as B7: this represents a valuable example of how innate immunity can boost adaptive responses. In addition, T lymphocytes interaction with DCs, can amplify responses through a positive feedback mechanism which involves co-stimulatory protein expression.

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