LAG-3 role in infection

LAG-3 role in bacterial infections

LAG-3 role in viral infections

Abstract

Lympocyte activation gene 3 (LAG-3) is a cell surface inhibitory receptor with multiple biological activities over T cell activation and effector functions. LAG-3 plays a regulatory role in immunity and emerged some time ago as an inhibitory immune checkpoint molecule.

Here, we will discuss the impaired control of cell-mediated immunity associated with high accumulation of LAG-3 after infection, in most cases associated with a high bacterial/viral load, a reduced survival rate or persisting metabolic and inflammation disorders. Interestingly, in the in vitro blockade of PD-1-LAG-3 interactions enhanced cytokine production in response to some of these infections.

Keywords: LAG-3; Immune Checkpoint.

Graphical abstract

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Conclusions

• A deeper understanding of the basic mechanisms underlying LAG-3 intracellular signaling will provide insight for further development of novel strategies for infection diseases.
• LAG-3 inhibitors may help the immune system, overcoming immune exhaustion to fight bacterial and viral infections.