--- The capacity to trigger various immunological checkpoint pathways with immunosuppressive properties.According to Junli Zhao et al., PD-1/PD-L1 signaling in hippocampus neurons controls cognitive processes and synaptic transmission.Therefore, it is easy to see that pathogen-infected cells use the PD-1/PD-L1 axis to promote the occurrence of immune inflammation in the local tumor microenvironment, disrupting the immune balance of the organism and avoiding the host immune system's attack, based on the previously mentioned molecular regulatory mechanisms of the PD-1/PD-L1 signaling pathway.By primarily reducing the activity of effector T cells and boosting the function of immunosuppressive regulatory T cells (Tregs), the interaction between PD-1 and PD-L1 negatively regulates adaptive immune response.T cell effectiveness can be increased by blocking the PD-1/PD-L1 pathway, which increases the sensitivity of pathogen-infected cells to immune checkpoint blockade therapy (Fig.Furthermore, by blocking T cell signaling molecules' downstream signal transduction, PD-1 can affect glycolysis and other metabolic pathways, impeding cellular bioenergetics [27].Through the PD-1/PD-L1 inhibitory pathway, Tissue-Resident Memory T Cells regulate tissue immunological homeostasis and mediate protective immune responses in the human pancreas [26].1).[27].