Orphan nuclear receptor TLX promotes immunosuppression via its transcriptional activation of PD-L1 in glioma

Graphical Abstract

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In Brief
This study shows, for the first time, that TLX contributes to glioma malignancy and immunosuppression through transcriptional activation of PD-L1 ligands that bind to PD-1 expressed on both TILs and TAMs. Thus, targeting the druggable TLX may have a potential therapeutic significance in glioma immune therapy.

Highlights
- TLX positively correlates PD-L1 expression in glioma.
- TLX is associated with a suppressive immune microenvironment in glioma.
- TLX transcriptionally promotes PD-L1 expression.
- Suppression of TLX inhibits in vivo growth of glioma and rescues antitumoral immune response.