

Programmed death ligand 1

Programmed death-ligand 1 (PD-L1) also known as [cluster of differentiation 274 \(CD274\)](#) or [B7 homolog 1 \(B7-H1\)](#) is a protein that in humans is encoded by the CD274 gene.

Programmed death-ligand 1 (PD-L1) is a 40kDa type 1 [transmembrane protein](#) that contributes to [tumor immunosuppression](#) during particular events such as [pregnancy](#), tissue [allografts](#), [autoimmune disease](#) and other disease states such as [hepatitis](#).

Normally the immune system reacts to foreign antigens where there is some accumulation in the lymph nodes or spleen which triggers a proliferation of antigen-specific CD8+ T cells. The binding of PD-L1 to PD-1 or B7.1 transmits an inhibitory signal which reduces the addition of these [CD8+ T cells](#) at the lymph nodes and supplementary to that PD-1 is also able to control the accumulation of foreign antigen-specific T cells in the lymph nodes through apoptosis which is further mediated by a lower regulation of the gene Bcl-2.

Chen et al. revealed a novel mechanism of how PD-L1 regulates [epithelial-mesenchymal-transition](#) (EMT) of cancer cells, namely [STAT1/IFIT2](#) signal pathway is required in PD-L1 mediated EMT in human [esophageal cancer](#) ¹⁾

Famoso et al. reported the first patient with a pineal melanoma to be managed by targeting PD-L1. Furthermore, she achieved the second longest overall survival and the longest progression-free survival reported in the literature ²⁾.

Programmed death ligand 1 in glioblastoma

see [Programmed death ligand 1 in glioblastoma](#).

Programmed death ligand 1 in meningioma

see [Programmed death ligand 1 in meningioma](#).

¹⁾

Chen J, Liu Y, Zhu Y, Chen Y, Feng J, Jiang T, Zheng X, Chen L, Jiang J. STAT1/IFIT2 signaling pathway is involved in PD-L1-mediated epithelial-to-mesenchymal transition in human esophageal cancer. Clin Transl Oncol. 2022 Feb 2. doi: 10.1007/s12094-021-02743-1. Epub ahead of print. PMID: 35107757.

²⁾

Famoso J, Lemole G, Sundararajan S, Stea B. Targeting PD-L1 After Adjuvant Radiation in Subtotally Resected Primary Pineal Melanoma: A Case Report and Literature Review. J Natl Compr Canc Netw. 2019 Oct 1;17(10):1148-1153. doi: 10.6004/jnccn.2019.7336. PubMed PMID: 31590158.

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