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Basic Study

PD-1, PD-L1 and PD-L2 correlated genes and their association with mutation, immune infiltration and clinical outcomes of hepatocellular carcinoma

PD-1, PD-L1 and PD-L2 in hepatocellular carcinoma

Abstract

BACKGROUND

The exact regulation network of PD-1, PD-L1, PD-L2 signal of immune escape was largely unknown. We aimed to describe the gene expression profiles correlating with PD-1 as well as its ligands of PD-L1, PD-L2, thus deciphering their possible biological process in hepatocellular carcinoma (HCC).

AIM

To find the possible mechanism of function of PD-1, PD-L1 and PD-L2 in hepatocellular carcinoma.

METHODS

Based on expression data of hepatocellular carcinoma from TCGA, the PD-1/PD-

Match Overview

1	Crossref 46 words Dieter Henrik Heiland, Gerrit Haaker, Daniel Delev, Bianco ... Mercas et al. "Comprehensive analysis of PD-L1 expressio	1%
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Differential expressions of PD-1, PD-L1 and PD-L2 between ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6469103>

Their results showed that when **PD-1** was combined with **PD-L1** or **PD-L2**, the expression of **PD-1** in metastasis, but not the primary, was an independent risk factor for OS, suggesting that the differential expressions of **immune** checkpoints between the primary and metastatic tumors were **correlated** with patients' prognosis . Since this study only ...

Cited by: 8

Author: Xingming Zhang, Xiaoxue Yin, Haoran Z...

Publish Year: 2019

Profiles of PD-1, PD-L1, PD-L2 in Gastric Cancer and Their ...

<https://www.hindawi.com/journals/bmri/2020/2496582> ▼

Background . Although multiple types of cancers demonstrated favorable outcome after immunotherapy of **PD-1/PD-L1** blockade, the specific regulatory mechanism of PD **genes** in gastric cancer (GC) remains largely unknown. Materials and Methods . Expression of RNA, copy number variants, **and clinical** parameters of GC individuals from TCGA were analyzed.

Author: Jingwei Liu, Hao Li, Liping Sun, Yuan... **Publish Year:** 2020

PD-L1 and PD-L2 expression correlated genes in non-small ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6545701>

Additional file 2: Fig. S1. **PD-L1 and PD-L2** expression **correlated genes** converge differently with IRF1 and IRF9 expression **correlated genes** in CCLE dataset Lung_NSC.A.Venn diagrams illustrating the number of **genes** with mRNA expression correlation in CCLE dataset (Lung_NSC, n = 114) using the GenomicScape portal for **PD-L1, PD-L2**, and IRF1 (left panel), **PD-L1, PD-L2** and IRF9 ...

Cited by: 8

Author: Trine Vilsbøll Larsen, Dianna Hussmann...

Publish Year: 2019

Clinical significance of PD-1/PD-Ls gene amplification and ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6276293>

Nov 10, 2018 . Background: The remarkable **clinical** activity of **PD-1** antibody in advanced



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PD-1, PD-L1 and PD-L2 correlated genes and their association with



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Profiles of PD-1, PD-L1, PD-L2 in Gastric Cancer and Their ...

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Background . Although multiple types of cancers demonstrated favorable outcome after immunotherapy of **PD-1/PD-L1** blockade, the specific regulatory mechanism of PD **genes** in gastric cancer (GC) remains largely unknown. Materials and Methods . Expression of RNA, copy number variants, **and clinical** parameters of GC individuals from TCGA were analyzed.

Author: Jingwei Liu, Hao Li, Liping Sun, Yuan Yu... **Publish Year:** 2020

High expression of PD-1 ligands is associated with ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5384346>

While an **association** between **mutation** burden and increased **PD-L1** or **PD-L2** expression was confirmed in our pan-cancer dataset in univariate analysis, we show that, in multivariate analysis, **PD-L1 and PD-L2** overexpression appears to be rather highly and independently **correlated** with kataegis—a specific localized hyper-mutational process caused ...

Cited by: 29

Author: Amélie Boichard, Igor F. Tsigelny, Razelle K...

Publish Year: 2017

The anticancer immune response of anti-PD-1/PD-L1 and the ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4637293>

Aug 14, 2015 · THE ROLE OF **PD-1/PD-L1** PATHWAY IN CANCER. The **PD-1/PD-L1** pathway has a crucial role in regulating immunosurveillance for tumors. **PD-1** can interfere with TCR/CD28 signals to suppress the **immune** responses of T-cell help (Tc1/Th1 skewing) in the tumor microenvironment through the **PD-1/SHP-2/p-STAT1/T-bet** axis []. Tumor cells expressing **PD-1** can limit the activity of tumor antigens ...

Cited by: 53

Author: Xinbing Sui, Junhong Ma, Weidong Han, Xi...

Publish Year: 2015



Programmed death 1, ligand 1 and 2 correlated genes and their ass



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[Positive expression of programmed death ligand-1 ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4474388>

Jun 15, 2015 · However, in patients with various types of cancer, the **immune** system is often characterized by the presence of a variety of inhibitory mechanisms preventing lymphocyte activation.¹³ **Programmed** cell **death** receptor 1 (PD-1) is typically expressed by activated lymphocytes.¹⁴ Its engagement by specific ligands, including PD **ligand** 1 (PD-L1) and PD ...

Cited by: 17

Author: Li Jiang, Liang Wang, Peng-fei Li, Xin-ke ...

Publish Year: 2015

[Expression patterns of programmed death ligand 1 correlate ...](#)

<https://www.nature.com/articles/s41416-018-0144-4>

Jun 20, 2018 · Calderaro, J. et al. **Programmed death ligand 1** expression in **hepatocellular carcinoma**: relationship With **clinical** and pathological features. Hepatology 64 , ...

Cited by: 21

Author: Chao-Qun Liu, Jing Xu, Zhong-Guo Zhou...

Publish Year: 2018

[\(PDF\) Association between Genetic and Immunological ...](#)

<https://www.researchgate.net/publication/339852628...>

1/2 **clinical** trial using the anti-PD-1 (**programmed** cell **death** 1) antibody nivolumab demon- strated an objective response rate (ORR) of 21–23% and a disease control rate (DCR) of 58–62% in ...

[Frontiers | Expression of Programmed Cell Death-Ligands in ...](#)

<https://www.frontiersin.org/articles/10.3389/fonc.2019.00883/full> ▾

Sep 11, 2019 · The quantity of **programmed** cell **death-ligand** 1 (PD-L1) is regarded as a predicting factor of **clinical** response to anti-PD-1 axis immunotherapy. However, the expression of PD-L1 and its prognostic value in **hepatocellular carcinoma** (HCC) patients remain debated. Meanwhile, the molecular features of PD-1's other **ligand**, namely PD-L2, as well as its correlation with clinicopathological ...

Cited by: 6

Author: Haotian Liao, Wen Chen, Yunlu Dai, Jose...

Publish Year: 2019