**Supplementary Table 1: Role of Dendritic cell in cancer development and progression.**

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| **Type of DC** | **Target/ Secretory molecules** | **Antitumor or Tumorigenic or Tumor progreesion Effect** | **Reference** |
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| Plasmacytoid DC | Produces IFN-I | Promotes anti-tumoral immunity through its direct activity on both tumor and immune cells. | Zitvogel et al (2015) [15] |
| pDC infiltration and accumulation in the tumor epithelium is predictive of a poor prognosis. | Labidi-Galy et al (2011) [16] |
| Tumor-infiltrating pDC are poorly immunogenic and have a significantly impaired capacity to produce IFN-I, however pDC isolated from the tumor-draining lymph nodes remain fully competent in IFN-I production. | Bruchhage et al (2018) [17] |
| Factors produced locally by tumor cells (eg. TGF-β, TNF-α, IL-10, Treg) have been implicated in altering the IFN-I expression in pDC. | Faith et al (2007) [18] |
| Head and neck tumors releases both TGF-β and prostaglandin E2 (PGE2) that reduce the IFN-I-producing capacity of pDC by releasing that are observed to be immunosuppressive. | Bekeredjian-Ding et al (2009) [19] |
| Secretes-IL-10, TGF- β, and indoleamine 2,3-dioxygenase (IDO) | Evoke tolerance and the induction of T cell anergy and/or deletion |
| T-cell costimulatory ligand (ICOS-L), OX40 ligand (OX40-L) | Engage Inhibitory receptors on T cells by expressing ligands | Matta et al (2010) [20] |
| Programmed cell death ligand 1 (PD-L1) | pDC presents PD-L1 to PD-1. Blocking of PD-L1 on pDC results in enhanced T cell activation in allogenic co-cultures. | Ray et al (2015) [21] |
| Conventional DC | Present as cDC1 and cDC2 | Strong inducers of T cell activity.  Tumor content of cDC1, is a reliable predictor of a good prognosis for cancer patients | Bottcher et al (2018) [22] |
| CD103+ cDC1 and CD11b+ cDC2 | Present at low frequencies in mouse models of melanoma, lung and colon carcinoma and mammary tumors | Diao et al (2018) [23] Laoui et al (2016) [24] |
|  | Tumor content of cDC1, is a reliable predictor of a good prognosis for cancer patients as observed by transcriptomic analysis of melanoma and breast cancer in humans | Broz et al (2014) [25] |
| Tumor associated pre cDC1 | Exhibit same phenotypic and functional characteristics as bone-marrow and spleen pre-cDC and Migration depends on tumor expression of chemokine CCL13. Once recruited, pre-cDC proliferate and differentiate into competent cDC. | Diao et al (2018) [23] |
| cDC1-specific cytokine IL-12 | Increased response to chemotherapy in Breast cancer | Ruffell et al (2014) [26] |
| XCL1 and CCL5 receptors | cDC1 establish cross-talk with natural killer (NK) cells in tumors by binding to XCL1 and CCL5 chemokines driving their accumulation in tumors | Wylie et al (2015) [27] |
| G-CSF mediated IRF8 down-regulation | Immunosuppression due to altered cDC1 differentiation in bone-marrow. | Meyer et al (2018) [28] |
| PGE2 | Migration of cDC1 is reduced when PGE2 is expressed by tumor cells. | Bottcher et al (2018) [22] |
| TGF-β and vascular endothelial growth factor (VEGF) produced by B16 melanoma | Tumor-derived molecules have inhibitory effect on the activation, cytokine expression and T cell stimulatory capacities of cDC | Hargadon et al (2016) [29] |
| PD-1 | In hepatocellular carcinoma, tumor-infiltrating cDC expression of PD-1 on their surface acts as a brake on cDC by limiting their T cell stimulation capacities | Lim et al (2016) [29] |
| Macrophage scavenger receptor 1 (MSR-1) | MSR-1 is involved in intracellular transport of lipids. During cancer alteration of the overall lipid content due to upregulation of MSR-1 causes increases lipid uptake by cDC. Alteration in lipid content interferes with MHC I and MHC II presentation by impairing antigen degradation in endosomes. | Herber et al (2010) [31] |
| Inflammatory DC (inf-DCs)/ Monocyte derived Dencritic cells (MoDCs) | Absence/ Presence | inf-DCs/MoDCs are absent in steady-state tissues and differentiate from monocytes during inflammation, infection and cancer | Leon et al (2007) [32] Zhan et al (2014) [33] |
| Tumor-associated inf-DC | Detected in several mouse cancer models and non-small cell lung carcinoma and colorectal cancer patients. | Laoui et al (2016) [24] |
| Cross-presentation tumor antigens | In Mice B16 melanoma, inf-DC efficiently induced strong CTL proliferation, and promoting tumor-specific CD8+ T cell immune responses | Diao et al (2018) [23] |
| A new population of cross-presenting DC was reported with anti-tumor activity in inflamed tumors. | Sharma et al (2018) [34] |