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| **Table 1 – Characteristics of senescent T cells** |
| **Phenotype** | **Description** | **Evidence in human ageing (defined TSEN subset investigated and reference)** |
| **CD4+ T cells** | **CD8+ T cells** |
| CD27-CD28- | Stimulatory co-receptors CD27 and CD28 are progressively lost during differentiation from naïve to memory T cell subsets  | ↑ %CD27-CD28 (Moro-Garcia et al., 2013) | ↑ %CD27-CD28- (Plunkett et al., 2007)↑ %CD27-CD28 (Henson et al., 2009) |
| CD27-CD45RA+ (TEMRA) | CD27 and CD45RA define naïve, TN (27+RA+), central memory, TCM (27+RA-), effector memory, TEM (27-RA-), and senescent, TEMRA (27-RA+) | ↑ %TEMRA (Libri et al., 2011)↑ %TEMRA (Callender et al., 2020)  | ↑ %TEMRA (Callender et al., 2020)↑ %TEMRA (Riddell et al., 2015) |
| SAβGhigh | Senescence-associated β-galactosidase | ↑ % SAβGhigh (Martinez-Zamudio et al., 2021) | ↑ %SAβGhigh (Martinez-Zamudio et al., 2021) |
| KLRG1+ | Killer Cell Lectin-like Receptor G1, co-inhibitory receptor | TEMRA (Di Mitri et al., 2011) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)TEMRA (Pereira et al., 2020)CD27-CD28 (Henson et al., 2009) |
| CD57+ | Terminal differentiation marker | TEMRA (Libri et al., 2011) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)TEMRA (Pereira et al., 2020)Old donor pan-CD8+ (Phadwal et al., 2012) |
| NKR+ | Natural Killer Receptors | Old donor pan-CD4+ (Alonso-Arias et al., 2011) | TEMRA (Pereira et al., 2020) |
| ↑ Cytokine and cytotoxic granule production  | Contributor to cytotoxic and inflammatory nature of senescent T cells, e.g. IFNγ, TNFα, perforin, granzyme B | TEMRA (Libri et al., 2011) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)TEMRA (Callender et al., 2018) |
| ↑ Sestrins | Sestrin-MAPK activation complex (sMAC) drives maladaptive T cell functions and NKR-mediated cytotoxicity | CD27-CD28- (Lanna et al., 2017) | CD27-CD28- (Pereira et al., 2020) |
| ↓ autophagy | Decreased autophagic flux | Old donor pan-CD4+ (Bharath et al., 2020) | CD57+ (Phadwal et al., 2012)TEMRA (Henson et al., 2014)Old donor vaccine-specific cells (Alsaleh et al., 2020) |
| ↓ proliferative ability |   | TEMRA (Libri et al., 2011) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)CD27-CD28- (Plunkett et al., 2007) |
| ↓ telomerase activity |   | TEMRA (Di Mitri et al., 2011) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)CD27-CD28- (Plunkett et al., 2007) |
| ↓ telomere length |   | TEMRA (Di Mitri et al., 2011) (TEMRA had shorter telomeres than TN) | CD27-CD28- (Plunkett et al., 2007)Old donor pan-CD8+ and TEMRA (Sanderson and Simon, 2017)TEMRA shorter than TN (Riddell et al., 2015) |
| ↑ γH2AX |   | TEMRA (Di Mitri et al., 2011)CD27-CD28- (Lanna et al., 2014)TEMRA (Callender et al., 2020) | TEMRA (Henson et al., 2014)TEMRA (Henson et al., 2015)TEMRA (Callender et al., 2020) |
| ↑ p-ATM (Ser1981) | Phosphorylation/activation of DDR | CD27-CD28- (Lanna et al., 2014) |   |
| ↑ 53BP1+ | p53-binding protein 1, DNA damage sensor |   | SAβGhigh (Martinez-Zamudio et al., 2021) |
| ↑ p-p53 (Ser15) | Phosphorylation/activation during DDR |   | TEMRA (Callender et al., 2018) |
| ↑ ROS | Reactive Oxygen Species | CD27-CD28- (Lanna et al., 2014) | TEMRA (Henson et al., 2014)Old donor pan-CD8+ (Sanderson and Simon, 2017)  |
| ↑ Dysfunctional mitochondria |   | Old donor pan-CD4+ (Bharath et al., 2020) | TEMRA (Henson et al., 2014)TEMRA (Callender et al., 2020) |