**Supplementary Table 1.** **Candidate CoP for COVID-19, NiVD and EVD.**

Candidate CoP for COVID-19, NiVD and EBV are indicated in blue. The immune correlates that are not considered as CoP candidates but are present in severe or lethal cases are indicated in red. In grey, the immune factors that have a non-clear role or that are not yet fully described in the literature.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Biomarker**  **category levels** | **COVID-19** | **NiVD** | **EVD** | **References** |
| **Innate Immune responses** | **Humoral** | Proinflammatory cytokines |  |  |  | (1-5)  (6-8)  (9-12) |
| Complement  (CDC) |  |  | c.i. | (13, 14)  (15, 16)  (17-19) |
| Natural antibodies | n.i.a. | n.i.a. | n.i.a. | -  -  - |
| Pentraxins | PTX3 | n.i.a. |  | (20, 21)  -  (22) |
| **Cellular** | Phagocytes |  |  |  | (23-26)  (27, 28)  (11, 29, 30) |
| Mast cells |  | n.i.a. | n.i.a. | (31-33)  -  - |
| Basophils and eosinophils | basophils |  | n.i.a. | (34-36)  (37-42)  - |
| eosinophils |
| γδ T cells |  |  |  | (43-45)  (46)  (47) |
| NK cells | \* |  |  | (48-53)  (42, 46)  (54-56) |
| **Adaptive Immune responses** | **Humoral** | Neutralizing Ab 1 | \*\* |  |  | (57-62)  (42, 63-72)  (73-79) |
| Surface viral protein Ab 1,2 | Anti-S | Anti-G  Anti-F | Anti-GP | (80, 81)  (70-72, 82, 83)  (79, 84) |
| Nucleocapsid Ab | Anti-N 2,3 | n.i.a. | Anti-NP 2 | (80, 81, 85)  -  (75, 79) |
| Fc-FcR Functions | ADCC ADCP | ADCC ADCP  (IgG2c) | ADCC ADCP | (13, 86-88)  (89)  (18, 90) |
| B-cell Memory | IgG1, IgG3 | IgG1 | IgG1, IgA1 | (57-59, 91, 92)  (42, 46, 93)  (79, 94) |
| Mucosal Ab | IgA | IgA | IgA | (95-99)  (100)  (79, 101) |
| **Cellular** | T-cell Phenotype | Th1, Polyfunctional  T cells  (IFNγ, TNFα, IL-2) | Activated CD8+ effector T cells  (Ki67+, PD-1 granzyme B) | Dominant CD8+ polyfunctional T cell  (IFNγ, TNFα and IL-2) | (102-104)  (8, 42, 63, 105)  (106, 107) |
| T-cell memory | CD4+ and CD8+ T cell memory | CD8+ effector memory T cells | Central memory CD4+ T cells | (91, 104, 108)  (42, 63)  (106, 107) |
| Mucosal T-cell responses | CD4+ and CD8+ T cell | n.i.a. | \*\*\* | (109)  -  (110, 111) |

Ab: Antibody; ADCC: Antibody-Dependent Cellular Cytotoxicity; ADCP: Antibody-Dependent Cellular Phagocytosis; CDC: Complement-dependent cytotoxicity; c.i.: contradictory information; n.i.a.: no information available; PTX3: pentraxin 3

\*: protection applies only to certain NK subtypes; long-term COVID-19 patients seem to have high levels of NK cells.

\*\*: protection varies depending on the VOCs and the measurement time after infection/immunization.

\*\*\*: only fatal cases present T cell clustering in the gut and the respiratory mucosa.

1: the main techniques used to determine the presence of neutralizing Ab include: pseudotype neutralization assay (pMN) and virus neutralization (VN) test.

2: the main techniques used to determine the presence of antibodies include Enzyme-linked Immunosorbent Assay (ELISA) and Luminex.

|  |  |
| --- | --- |
| **CoP** |  |
| **Non-CoP** |  |
| **Contradictory information or not yet described** |  |

3: neutralizing capacity takes place through Trim-21 mediated Intracellular Neutralizing antibodies (T21VNAb) and was quantified by electroporated antibody-dependent neutralization assay (EDNA).

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