

## Supplementary material 2: Patient selection

Selected patients included Rheumatoid Arthritis (RA) according to the ACR/EULAR 2010 classification criteria, Systemic Lupus Erythematosus (SLE) according to the 2012 Systemic Lupus Erythematosus International Collaborating Clinics criteria (SLICC), Systemic Sclerosis (SS) according to the ACR/EULAR 2013 classification criteria and Sjogren's disease according to the ACR/EULAR 2002 classification criteria.

Within the IMRD study groups we only included patients with low/moderate activity index, according to disease-specific scales.

To make the distinction between IMRD cohort 1 (ISP+) and IMRD cohort 2 (ISP-) on the basis of the treatment received we arbitrarily considered a composite of several objective factors: a) drug's recognized mechanism(s) of action; b) available drug's reported effects on the immunogenicity of vaccine types commonly administered i.e influenza (live attenuated), pneumococcus (polysaccharide, polysaccharide-conjugated), Haemophilus influenzae b (polysaccharide-conjugated), tetanus-diphtheria (toxoid) and herpes zoster (recombinant protein subunit); c) timing i.e treatment(s) received during the previous two years before SARS-Cov2 vaccination, assuming that previously used drugs would not any longer affect mRNA vaccine's immunogenicity; d) monotherapy or combined therapy.

According to the combination of these items:

- Patients on monotherapy with any drug exerting a well recognized direct effect on T and/or B cells were included in group 1 ISP+ (Cyclosporine, Takrolimus, Abatacept, Rituximab, Belimumab, Azathioprine, Mycophenolate and Methotrexate).
- Patients on monotherapy with final effector inflammatory cytokine-blockers (anti-TNF, anti-IL1, anti-IL17, anti-IL6) were included in cohort 2 (ISP-).
- Patients on any combo therapies were included in cohort 1 (ISP+).
- Because their broad effects on different cytokines and the lack of enough quality data on vaccine's immunogenicity, patients on anti-Jak kinase therapies were not included in the study.
- No patients on therapies blocking more proximal cytokines, ie anti-IL12p40 or anti-IL23p19, that could modify T differentiation, were included in the study.