Inclusion criteria

- Signed informed consent
- Age **18-85 years**
- Admitted to the hospital because of **confirmed COVID-19 infection** (by positive SARS-CoV-2 PCR result)
- **Evidence of pulmonary involvement** on CT scan or X-ray of the chest
- **Symptom onset within previous 10 days OR shortness of breath within the previous 5 days**
- Expected to **remain inpatient for next three calender** days from time of enrolment
- At least **one additional risk factor** for progression:
    1) Arterial hypertension
    2) ≥50 years
    3) Obesity (BMI≥30.0 kg/m2)
    4) History of cardiovascular disease
    5) Chronic pulmonary disease
    6) Chronic renal disease
    7) C-reactive protein of >35mg/L
    8) Oxygen saturation at rest in ambient air of ≤94%.

Exclusion criteria

- **Age >85 years**
- Contraindications to the class of drugs under study (C1 esterase inhibitor)
- **Treatment with** tocilizumab or another **IL-6R or IL-6 inhibitor** before enrolment
- History or suspicion of **allergy to rabbits**
- **Pregnancy or breast feeding**
- Active or planned treatment with any other complement inhibitor
- Liver cirrhosis (any Child-Pugh score)
- Currently admitted to an ICU or expected admission within the next 24 hours
- Currently receiving invasive or non-invasive ventilation
- Death deemed to be imminent and inevitable within the next 24 hours
- **Participation in another study with investigational drug within the 30 days preceding** - with the following exemptions:
  1) Participation in COVID-19 drug trial started at least 48hrs before admission (e.g. postexposure prophylaxis)
  2) Participation in COVID-19 drug trials during ICU admission
- Previous enrolment to current study
- Enrolment of the investigator, his/her family members, employees and other dependent persons

Endpoints and study sites

Primary endpoint: Disease severity within 7 days after enrolment as assessed by WHO Ordinal Scale for Clinical Improvement.

Patient State	Description	Score
Outpatient	No limitation in activities	1
	Limitation in activities	2
Hospitalized	No oxygen therapy	3
Mild disease	Oxygen by mask or nasal prongs	4
Hospitalized	Non-invasive ventilation or high-flow oxygen	5
Severe disease	Intubation, mechanical ventilation +/- organ support	6
Death	Death	7

Adapted WHO Ordinal Scale (score 0 omitted and score 6 and 7 combined)

Secondary endpoints:

- Time to clinical improvement within 14 days after enrolment.
- Proportion of participants alive and not having required invasive or non-invasive ventilation at 14 days after enrolment.
- Proportion of subjects with an acute lung injury (PaO_2/FiO_2 ratio of $\leq$300mmHg) within 14 days after enrolment.

Swiss study sites:

Universitätsspital Basel
PD Dr. M. Osthoff
Prof. Dr. P. Sendi
Prof. Dr. M. Trendelenburg

Stadt Zürich Stadtspital Triemli
Prof. Dr. L. Huber

Kantonsspital St.Gallen
PD Dr. W. Albrich

International study sites (Brazil/Mexico):

FMABC CENTRO UNIVERSITÁRIO
Dr. M. Bacci

UANL UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
Prof. A. Camacho-Ortiz