

AANVRAAGFORMULIER PROJECTIDEE – BOTTOM-UP RONDE COVID 19 programma

Deadline voor indiening: 14 mei 2020 (14:00 u)

**LEES ALSTUBLIEFT ALLE INSTRUCTIES IN BIJLAGE "TOELICHTING
INDIENING PROJECTIDEE" VAN DE OPROEPTEKST ZORGVULDIG!**

Wanneer u het formulier heeft ingevuld:

1. Zet het formulier om naar een PDF file en controleer de details
 2. Upload het complete formulier als een bijlage bij uw indiening in Projectnet
(Let op: dit zijn twee verschillende links, gebruik maar 1 van de 2!)
- ProjectNet: [Aandachtsgebied 1 \(voorspellende diagnostiek en behandeling\)](#)
ProjectNet: [Aandachtsgebied 2 \(zorg en preventie\)](#)

BASISGEGEVENS (voorpagina)

NAAM VAN DE HOOFDAANVRAGER:

(10)(2a) (10)(2a)

ORGANISATIE:

RIVM, CiB, IDS-Virology

PROJECTTITEL:

DATASTEWARD:

Wie is de datasteward die de open science en FAIR data planning in uw project ondersteunt? Zie de webinars op de [ZonMw website](#) om de datastewards te informeren en ondersteunen.

☐ Ik betrek een datasteward bij mijn project:

Naam: Klik of tik om tekst in te voeren.

Instituut: Klik of tik om tekst in te voeren.

E-mail: Klik of tik om tekst in te voeren.

Was aanwezig bij de webinar: ☐ Ja ☐ Nee

☐ Ik heb nog geen datasteward.

ONDERZOEKSVOORSTEL
max 3 pagina's A4
(inclusief literatuurreferenties)

(voorpagina met basisgegevens niet meegerekend -
font type Arial 10 pts)

1. PROBLEEMSTELLING EN DOELSTELLING(EN):

The virus causing COVID-19, SARS-CoV-2 (SC2) is frequently detected in stools, of patients and post and asymptomatic shedders (ref). So far a limited number of studies have succeeded in SC2 isolation from stools: these studies do show the "proof of principle", ie infectious virus can be excreted via feces (refs). New studies also showed the expression of the receptor ACE2 and TMPs2 on enterocytes throughout the GI tract and replication of SC2 isolated from nose/throat swabs in intestinal organoids and the colonic cell line Caco-2 (refs).

On the other hand, several other studies report failing to isolate SC2 from stools (Refs). The conflicting results indicate that there might be barriers for successful isolation of this virus in vitro or that the viruses do lose their infectivity in the gastro-intestinal tract or in stools. Additionally, also virus isolation from samples of respiratory origin (nose/throat swabs, saliva, ...) with a virus load semi-quantified at Ct 30 in the most frequently used PCR assays is often unsuccessful (ref). Another study suggested that SC2 is sensitive to inactivation by compounds in the colonic fluid such as ... (refs).

After reporting detection of SC2 in sewage samples by the RIVM for the Netherlands, the environmental surveillance based on wastewater sampling for SC2 has taken off in several countries (refs). A consensus finding of these studies is that the ease and frequency of SC2 detections in waste water samples is higher than was expected on the number of known fecal excretors of SC2 in the catchment populations. This suggest that an additional source does exist for the high number of SC2 viruses in wastewater.

We hypothesise that children may be this source and aim to investigate the role of gastro-intestinal SC2 infections in children and if there might be difference in tissue tropism leading to mostly GI infections in children and respiratory infections (and disease) in adults and elderly. Additionally, increased insight in the source of the SC2 in wastewaters and in the infectivity of SC2 in stool samples will guide the development of additional mitigation strategies aiming at reducing fecal-oral transmission. These insight will also will add to the value of environmental surveillance in early detection of SC2 and to monitor the disappearance of SC2 infections.

2. PLAN VAN AANPAK:

The project will entail 3 workpackages

- 1/ Development of an optimized virus isolation protocol for SC2 from stool samples: asap dilution of fresh stools in culture medium, optimize cell sensitivity using isolate dilution series and enzyme preparations.
- 2/ Collection and analysis of 200 (?) stool samples from children (< 15 yr)(symptomatic and contacts) to determine SC2 prevalence, and its infectivity, in stools. Follow up samples? time series?
- 3/ Obtain whole genome sequences from stool-respiratory sample pairs from xx children ?? adults? to determine if respiratory excreted SC2 is different from fecal excreted SC2 (with and without virus isolation?) and to assess if earmarking mutations may predispose for GI infections.

3. HAALBAARHEID VAN HET PROJECT:

TIJDSSHEMA

??

MOTIVATIE HAALBAARHEID

(ik zie niks over budget, toch indicatie doen?)

4. RELEVANTIE VOOR DE PRAKTIJK:

Onderbouw de relevantie aan de hand van de in de subsidieoproep benoemde relevantiecriteria

5. DEELNAME VAN DE STAKEHOLDER(S) (e.g. patiënten, zorgprofessionals, etc.):

1. RIVM Dr (10)(2e) (10)(2e), Dr (10)(2e) (10)(2e), Dr (10)(2e) (10)(2e), Dr (10)(2e)

2.

6. LITERATUURREFERENTIES (optioneel):

Nog invullen