



# Excellent project



<b>Title:</b>	Virus detection in TC and real time PCR (outstanding VL4 or VL5M students)
<b>Vacancy:</b>	One Life Science student (VL5M level; alternatively outstanding at VL4 level)
<b>Credits:</b>	Excellent star after consultation (e.g. gedrevenheid of vakbekwame en reflectieve professional)
<b>Assessment:</b>	Final assessment will be based on successful design of virus detection, rt PCR incl. controls and preparation of adequate protocols
<b>Required skills:</b>	Affinity with Tissue culture, virus culture and real time PCR
<b>Location:</b>	Heidelberglaan 7, Utrecht
<b>Contact person:</b>	John Bouwman

## Background information:

In clinical diagnostics detection methods for viral pathogens cover an essential and substantial part of the diagnostic package. Conventional cell culture is too laborious and time consuming. Nevertheless, application of blind IF in cell culture accelerates time to results considerably. In that respect, cell culture techniques are currently replaced by even more sensitive and rapid assays like (quantitative) real time PCR.

## Objective:

For didactic purposes the ILC wants to establish cell lines for viral cultures. Subsequently, diagnostic procedures (virus infection combined with blind IF) need to be developed. Various viruses can be harvested, quantified and frozen for future experiments (infection experiments, controls and real time PCR). In addition, protocols have to be written.

## Approach:

- establishing continuous cell lines for virus culture (harvesting cells for freezing into liquid nitrogen)
- seeding cells in 24-well plates and infection experiments with various viruses
- set up of blind immunofluorescence detection procedure with monoclonal antibodies
- harvesting virus for bulk storage freezing in -80 C
- optimizing TCID<sub>50</sub> and quantification assays
- set up of (quantitative) real time PCR protocols incl. controls derived from frozen virus stocks

## Applicant profile:

The applicant is preferably an enthusiastic and motivated microbiology student in semester VL5M (alternatively VL4) or has demonstrable affinity with cell culture techniques and molecular diagnostics. The student is proficient in these techniques. Obviously, good laboratory skills, creativity, perseverance are major requirements. In addition, a critical attitude towards working responsibly and safely with infectious materials in a delicate TC environment are required.

## Additional information:

Are you interested in this project, please feel free to contact me at any time.

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