

Microbiology news: new developments / Nuwe verwickelinge by Mikrobiologie

(Afrikaans volg na Engels)

Dear Client,

NviroTek Laboratories is proud to announce that we have officially received accreditation for our PCR methods and will soon transition to conducting the following tests with this technique.

- Detection of Salmonella spp
- Detection of Listeria spp
- Detection of Listeria monocytogenes
- Detection of E. coli O157:H7

Why PCR?

There are several reasons why PCR is superior to older techniques used by laboratories:

Faster Results: The PCR reaction generally provides results 24 hours faster than any other laboratory test for the same organism. This is because organisms are not streaked on plates and do not need to grow for hours in an incubator. Instead, they are typically tested directly after a 24-hour incubation in a selective growth medium.

Higher Sensitivity: PCR is significantly more sensitive than traditional laboratory tests. The core of PCR lies in the amplification of DNA to millions of copies during the reaction itself. Even if only a single strand of DNA is present in the initial sample, it will be amplified until it can be easily measured. This means the PCR method is highly sensitive in detecting very low numbers of organisms.

Greater Accuracy: Traditional techniques rely on biochemical reactions that occur in organisms, causing colour changes or gas production in the medium (which can also be caused by various other bacteria). In contrast, PCR works on the DNA of the specific organism, allowing it to be identified precisely at the family, species, or genus level, as preferred. This makes PCR much more specific and accurate.

What about dead cells, such as in cases where preservatives or heat treatments have been applied?

NviroTek will normally only test live cells, but with PCR the option exists to test the total content- should you require it.

Cost Considerations:

PCR is a more expensive than traditional chromogenic agar, due to the costly, imported technology. However, NviroTek believes that PCR represents the future of microbiological testing due to its many advantages. Benefits like faster turnaround times, and more accurate and sensitive results, are now available at similar prices to that of the traditional methods.

Please contact us if you are unsure and would like to discuss it or wish to continue with the old method.

Additional Developments:

- NviroTek has also accredited a new chromogenic medium for the determination of yeasts and moulds, allowing us to detect yeasts and moulds within 3 days (instead of the 5 days required by the old method). This method will also be offered at the same price as the old method.
- NviroTek also offers TAB (Thermophilic , acidophilic bacteria) detection via PCR. This is now a 3-day test, compared to the usual 15 days, with the added advantage of being able to detect Guaiacol-producing Alicyclobacillus. Note that, unlike our 15-day test, this is not yet an accredited test. Price available upon request.

Best regards,

Dr Karin Conradie, on behalf of the NviroTek microbiology team. (karin.c@nvirotek.co.za)

Geagte kliënt

Nvirotek Laboratoriums is trots om aan te kondig dat ons amptelik akkreditasie op ons PCR- metodes ontvang het en beoog om binnekort die volgende toetse met behulp van PCR te doen.

- Salmonella spp. Opsporing
- Listeria spp. Opsporing
- Listeria monocytogenes Opsporing
- E coli 0157:H7 Opsporing

Waarom PCR?

Daar is verskeie redes hoekom PCR beter is as ander tegnieke wat deur laboratoriums gebruik word.

Vinniger resultate: Die reaksie is oor die algemeen 24uur vinniger as enige ander laboratorium toets vir dieselfde organisme. Die rede is dat organismes nie op plaatjies uitgestreep word nie, en dus nie nog vir ure in die inkubator moet groei nie. Dit word gewoonlik na 'n 24uur inkubasie in 'n spesifieke groeimedium getoets.

Meer sensitief :PCR is 'n baie meer sensitief as die tradisionele agar toetse. Die kern van PCR lê daarin dat DNA gedurende die reaksie vermeerder word . Selfs al is daar net een stringetjie DNA teenwoordig in die aanvanklike monster, word dit vermeerder tot dit maklik gemeet kan word. Dus is die PCR metode baie effektief om baie lae getalle van organismes op te tel.

Meer akkuraat: Gewone tegnieke maak gebruik van biochemiese reaksies wat in organismes plaasvind en dus kleurveranderinge of gas veroorsaak in die medium (ongelukkig kan hierdie reaksies ook deur verskeie ander bakterieë teweeggebring word).PCR daarenteen werk op die DNA van die spesifieke organisme en kan vanaf familie, spesie of genusvlak bepaal word,dus baie meer spesifiek.

Wat van dooie selle soos in die geval waar preserveermiddels of hittebehandeling toegepas is?

NviroTek sal normaalweg slegs die lewendige selle met die PCR- tegniek toets, maar die tegnologie bied die opsie om die totale inhoud te bepaal indien so versoek word.

Wat van die kostes?

PCR is ongelukkig duurder as gevolg van die duurder tegnologie wat van oorsee af ingevoer moet word. NviroTek glo egter dat PCR- tegnieke die toekoms van mikrobiologiese toetse is aangesien daar soveel voordele is. Dus bied ons graag die voordele van vinniger omdraityd en meer akkuraat en sensitiewer resultate teen pryse wat soortgelyk is as die tradisionele chromogeniese agar -metodes.

Kontak ons gerus indien u onseker is en eers daaroor wil gesels, of verkies om met die ouer agar-metode voort te gaan.

Ander ontwikkeling:

- NviroTek het 'n nuwe chromogeniese medium vir die bepaling van Giste en Skimmels geakkrediteer wat ons in staat stel om Giste en skimmels binne 3 dae (i.p.v. die 5 dae van die ou metode) te doen. Die metode word teen dieselfde prys as die ou metode aangebied.
- NviroTek bied ook TAB opsporing op die PCR aan. Dit is nou 'n 3 dag toets, teenoor die normale 15 dae, met die addisionele voordeel dat Gauacol produserende Alicyclobacillus ook waargeneem kan word. Let wel, anders as ons 15 dag toets is hierdie nog nie 'n geakkrediteerde toets nie. Prys op aanvraag.

Groete

Dr Karin Conradie , namens die NviroTek Mikrobiologie span.(karin.c@nvirotek.co.za)
