CAPHIV

Early detection of HIV-1 using ultrasensitive, rapid capacitive biosensor

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Prepared By:	CAPSENZE HANDELSBOLAG

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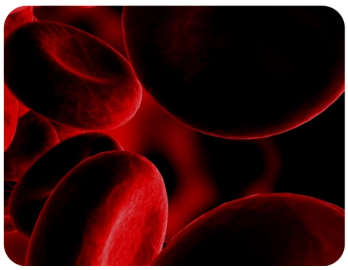
Caphiv

The CapHIV proposal addresses the need to increase the competitiveness of the SME partners by developing a cost-effective method to screen p24 capsid protein for the early diagnosis of HIV infection, a major health and economic threat to the quality of life of European citizens. A group of SMEs, covering the supply chain, have put together this proposal in order to gain the knowledge and resources to realise a CapHIV device exploiting the results of the novel, ultra-sensitive capacitance based sensor technology proposed by providing a fast and reliable early screening method in a cost efficient way.



The consortium guarantees complementary and synergistic business interests, ensuring a rapid and dynamic route of the technology to the market.

cap Rapid Screening HIV

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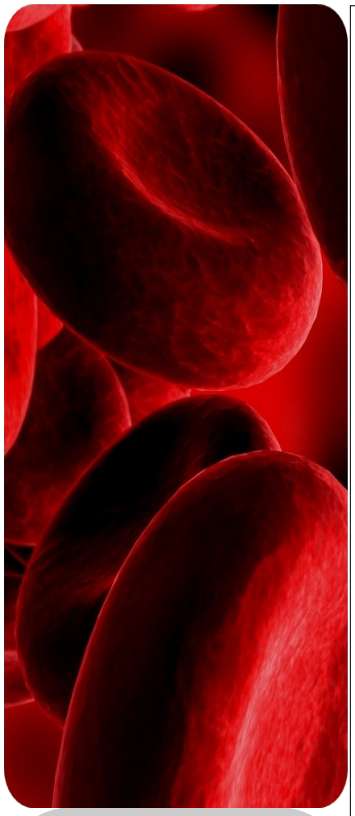
Partners

Partner No.	Short name	Legal name	Country
1. (RTD)	**MFKK**	MFKK INVENTION AND RESEARCH CENTER SERVICES COMPANY LTD.	HU
2. (SME)	**CAPSENZE**	CAPSENZE HANDELSBOLAG	SE
3. (SME)	**PHENO**	PHENOSYSTEMS SA	CH
4. (SME)	**LIO**	LIONEX GMBH	DE
5. (SME)	**ABBCN**	AB BCN S.L.	ES
6. (SME)	**FIMA**	FIMA SRL	IT
7. (RTD)	**LU**	LUNDS UNIVERSITET	SE



http://www.caphiv.eu/survey.

Project progress

The CAPHIV project aims at developing a quick and automatic biosensor that targets the detection of a protein produced in the early stages of the disease and not that of an antibody. The device is expected to diagnose the disease within two weeks of the infection. The applied technology is to reduce measurement time and reduce costs associated with HIV testing.
One of the first steps was to create a project website that would serve as an efficient and effective information and communication system for the consortium members and the stakeholders and will function as the primary dissemination channel for CAPHIV. The URL of the website is www.caphiv.eu which is hosted by MFKK for the period of the project.
The second step was to prepare a questionnaire aimed at clinical laboratories, research facilities etc. dealing with clinical HIV diagnostics across Europe.

The market assessment study is not complete and the answers are still being collected.The survey is available on the project website: http://www.caphiv.eu/survey. The results of the survey helped define the system specifications of the future CAPHIV device which are laid down in Deliverable 1.1 along with the Euroopean legislation and current methods used for HIV diagnosis. The objectives of the system specifications are to develop a **low-cost disposable sensor** integrating all required sensing elements, a **disposable sensor cartridge** and appropriate mechanic, fluidic, and electric **interfaces between the cartridge and the supportive device.** The main **modules** planned for the CAPHIV screening device have also been defined together with the software functions and market objectives to develop a device that would reconcile technical-clinical specifications and market needs.

The system specifications were discussed at M3 meeting in Braunschweig on the 28th of Nov, 2011.The third project meeting was held on the 29th of February in Lund, Sweden whose main objective was to prepare the consortium for the reporting period, discuss the status of the **market survey** and present the **disposable cartridge** developed. A list of the best **commercially available antibodies** was also prepared which will be compared with the antibodies to be developed by one of the SME members of the consortium in the future. The next meeting planned is the crucial M9 in Barcelona in May where the Go/No go decision will be taken.

Conferences

Copenhagen 2012 Conference

HIV in Europe
Working Together for Optimal Testing and Earlier Care
Copenhagen 2012 Conference

This conference will be attended by one of the consortium members to get some feedback on the possible demand for the Caphiv device in the future and an overview about the latest innovative initiatives and trends in HIV testing and policies.

To identify political, structural, clinical and social barriers to achieving optimal testing and care

Conference objectives

The main objectives of the HIV in Europe Copenhagen Conference 2012 are to:

- Provide an overview of European innovative initiatives and best practices on optimal testing and earlier care - how to bring people to testing?
- Sustain and fuel the political discussion of the WHO EURO testing guidelines (2010), ECDC testing guidelines (2010)and ECDC-EMCDDA Guidance "Prevention and control of infections among people who inject drugs"(2011),the EU Communication on HIV/AIDS and EP Resolution adopted 1 Dec 2011 and their implementation at national levels
- Accompany the debate at EU HIV/AIDS Civil Society Forum and Think Tank level on HIV testing
- Provide opportunities for multi-stakeholder dialogue to develop creative solutions to unresolved challenges in research and implementation of HIV policies and programmes to improve early diagnosis and care of HIV across Europe - which people are prevented from testing and treatment, which measures are needed to overcome theses problems, which are the incentives for policy makers and people undiagnosed to become more active?
- Discuss and take forward the strategy for implementation of changes based on the concrete outcomes of the projects and initiative.
- Inform leaders, including key policy makers and donors, as to increase their commitment to ensure that HIV infected patients enter care earlier in the course of their infection than is currently the case.
- Increase public awareness of the public health problems associated with late presentation for HIV care.
- Present data available on temporal trends of late presenters and the undiagnosed population and data on the cost-effectiveness of HIV testing demonstrating how scaling up HIV testing can contribute to more sustainable health systems.
- Discuss HIV testing and linkage to care and testing among key populations and the role of new HIV testing diagnostic technologies.

http://

www.hiveurope.eu/

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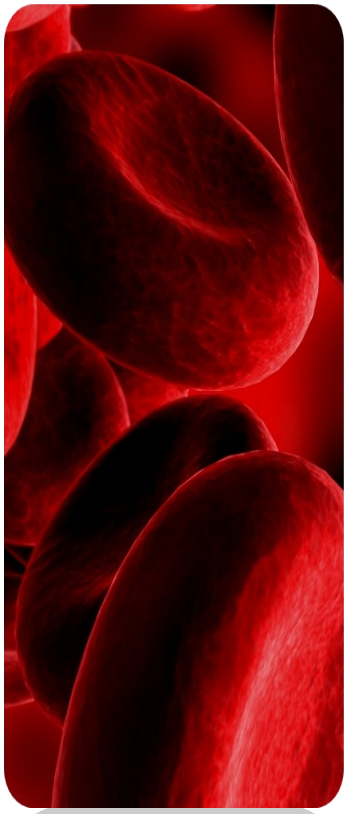


Patent Watch

Assay for detecting and quantifying HIV-1

ASSAY FOR DETECTING AND QUANTIFYING HIV-1 Abstract Compositions, methods and kits for detecting HIV-1 nucleic acids using nucleic acid amplification. Particularly described are oligonucleotides that are useful as 5 hybridization probes and amplification primers for detecting very low levels of HIV-1 nucleic acids by real-time monitoring of amplicon production. The invented assays are characterized by high levels of precision in the quantitation of HIV-1 targets at low copy numbers, and by accurate detection of different HIV -1 subtypes, including M group and o group variants. 573621 1:gcc

Internally controled multiplex detection and quantification of microbal nucleic acids
EP2404562 (A1) 2012.01.04.

The present invention relates to new methods and uses for the detection and quantification of nucleic acids of HIV, employing an internal quantitative reference. Preferred methods are based on the amplification of nucleic acids, preferably the polymerase chain reaction. Further provided are kits comprising components for performing said methods and uses.

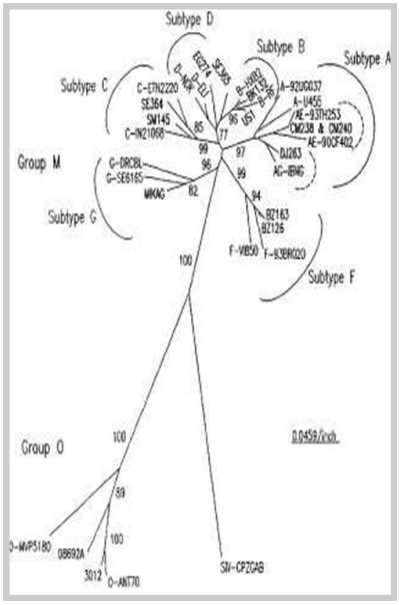
Method of detection of Nucleic Acids with a Specific Sequence Composition
US2011263045 (A1) 2011.10.27.

This invention is a novel method for detecting and localizing specific nucleic acid sequences in a sample with a high degree of sensitivity and specificity. The method and novel compositions used in the method involve the use of Probe Nucleic Acids, the production of nucleic acid binding regions and the use of nucleic acid Target Binding Assemblies to detect and localize specific Target Nucleic Acids. The detection and localization of the Target Nucleic Acid is accomplished even in the presence of nucleic acids which have similar sequences. The method provides for a high degree of amplification of the signal produced by each specific binding event. In particular, methods and compositions are presented for the detection of HIV and HPV nucleic acid in samples. These methods and compositions find use in diagnosis of disease, genetic monitoring, forensics, and analysis of nucleic acid mixtures. Some of the novel compositions used in the detection method are useful in preventing or treating pathogenic conditions.

Patent Watch

Amplification and detection reagents for HIV-1 EP2390259 (A2) 2011.11.30.

Oligonucleotide primer sets, probes, and combinations of the primer sets and probes are provided herein. These reagents are useful for amplifying and detecting HIV-1 target sequences in a test sample.



Human Immunodeficiency Virus and Uses Thereof US2011281258 (A1) 2011.11.17.

The present invention relates to Human Immunodeficiency Virus-1 (HIV-1) Group P of the strain designated 06CMU14788 and fragments thereof, primers which are derived from HIV-1 Group P, immunogenic regions thereof, immunoassays and nucleic acid based assays for the detection of Human Immunodeficiency Virus (HIV) that employ said HIV-1 Group P or fragments thereof and therapeutic compositions containing said HIV-1 Group P or fragments thereof.

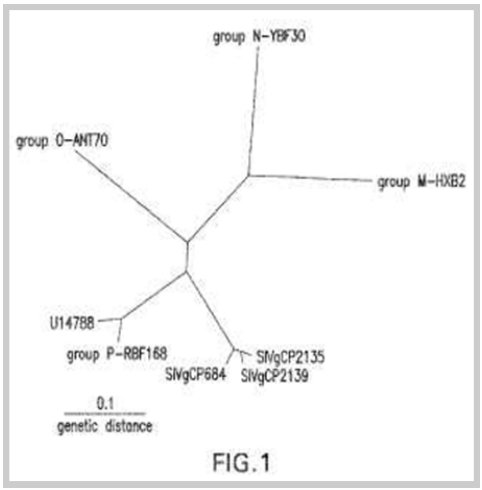


FIG.1