KIT AND METHOD FOR THE DETECTION, IDENTIFICATION AND DIFFERENTIAL DIAGNOSIS OF DENGUE VIRUS, WEST NILE VIRUS, *Rickettsia spp.* AND *Leptospira spp*. VIA REAL-TIME PCR	
Offering Organization:	Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C.
Type of Organization:	Public Research Center
Development Stage:	Commercial Concept Tests
Desired Relationship:	– Technological research and development financing (technological partner) – Specialized application tests – Creation of a new company (Joint Venture) for the commercialization of the products outlined herein – Licensing of patents
Sector:	Molecular Biology
Area of knowledge:	Biomedical Biotechnology
Key words:	Dengue Fever, Dengue virus, West Nile virus*, Rickettsia spp*, *Leptospira spp*,

DETAILED DESCRIPTION:

Problem to be solved:

A patient's fever can be caused by various etiologies, among which infections caused by microorganisms such as viruses and bacteria stand out. Dengue virus, West Nile virus, *Rickettsia spp* and *Leptospira spp* all produce a fever and very similar symptoms during the early days of the disease despite their different mechanisms of pathogenicity. This leads to confusion about them, improper diagnosis and poor treatment which in turn generates an increase in resource expenditures, agent multiplication and in some cases can result in death. Molecular diagnostic techniques aid in the detection and analysis of microorganisms.

Solution:

The present invention detects and identification of the four pathogens (Dengue virus, West Nile virus, *Rickettsia spp* and *Leptospira spp*) from a single sample using a mixture of oligonucleotide PCR primers.

New and Innovative Aspects:

- This method is effective in the simultaneous detection of four types of microorganisms, from either viral RNA or cDNA.
- Protection of the polymerase with an antibody that remains stable and inactive until activated.
- Design of specific oligonucleotides (non-degenerate primers) so as to avoid causing non-specific results.

TECHNICAL CHARACTERISTICS:

The invention includes the design and preparation of oligonucleotide PCR primers. The design was obtained from the alignment of sequences of different strains and serotypes in order to find conserved sequences. Nucleic acids from pathogens were obtained in order to formulate standardization and later positive controls were introduced and the results obtained from the clinical samples were validated.

Main advantages derived from its utilization:

- Rapid and accurate detection of the microorganisms described above, through the amplification of a genomic fragment.
- Diagnostic suitable for the treatment of a specific disease and proper use of resources in hospitals and health centers.

Applications:

- Detection of pathogens for subsequent, accurate diagnosis.

INTELLECTUAL PROPERTY

- Patent filed in 2013
- MX/a/2013/013012

ABOUT THE OFFERING ORGANIZATION

Presentation:	El Centro de Investigación y Asistencia en Tecnología y Diseño del Estado de Jalisco, A.C. (CIATEJ) is a public research center that belongs to the national technology development and innovation network, the National Council for Science and Technology (CONACyT). CIATEJ is focused on the agricultural, food, health, and environmental sectors with an emphasis on the application of innovative biotechnology.
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