

Technological Trends on Dengue Virus Diagnosis through Patent and Literature Analysis

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Abstract

Dengue is a viral disease that, according to WHO, occurs in about 50 million cases worldwide yearly, increasing over 30 times in the last 50 years. Nowadays affects 110 countries in the world's intertropical region and spreading in a pandemic way. From those millions officially diagnosed about 500,000 cases require hospitalization and about 12,500 die, implying high socio-economical costs. Meanwhile, more aggressive serotypes of Dengue virus are emerging, more cost effective, specific and rapid diagnosis is urgently needed.

This work is focused on the study of technological trends on dengue virus diagnosis. Patent and literature databases were developed using different Boolean keyword search approaches, for selecting those patent and scientific articles specifically related to detection and diagnosis methods on dengue virus. Said documents were filtered and classified according to the type of diagnosis strategy (immunologic, molecular, etc.) and upon time. Afterwards, specific kinds of methodologies (culture media, ELISA, PCR, RT-PCR, etc.) were pointed out, including specific protein or nucleotide sequences related to each document. Our analysis allowed us to detect which methods, proteins or genes are the most protected and studied and the different actors (universities, companies, inventors, researchers) upon time, involved in the development of this technology.

By analyzing both patent and scientific literature documents, the technological trend over diagnosis and detection of dengue virus is provided, which may be helpful for deciding new research projects based on detecting potential research opportunities over highly protected or disclosed areas.