COVID-19 FROM THE PERSPECTIVE OF INTELLECTUAL PROPERTY

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Objectives

Patents quantify the inventive step, technical collaboration, advancement, and technological trend in a given scientific field. This work had the objective of evaluating the invention patents families related to COVID-19.

Methods

This is a descriptive and documentary research of invention patents families. The patents families were selected using the keyword COVID in the title, abstract, description, the object of the invention, and concepts of the patent documents. The primary data were analyzed using the Orbit Intelligence® 1.9.8 software.

Results

This work selected 11,779 patent families from 2001 to 2021, 98% with first application year from 2020 (Figure 1). The protection was mainly guaranteed by the World Intellectual Property Organization (3,875), European Patent Office (2,749), China (3,112), and United States of America (2,205) (Figure 2). Among the 30 active assignees with the highest level of inventiveness, 57% were universities (Figure 3). Among the 11,779 patent families selected, the main International Patent Classification (IPC) Code was A61P-031 (Figure 4), referring to patents for the invention of antiinfectives. The top applicant's main technological areas based on IPC code groupings were Pharmaceuticals and Medical Technologies (Figure 3). The main concepts used in the documents were related to the virus and the natural history of the disease (Figure 3). No strong interactions were identified in the citations between applicants in the selected patent families, except among some research institutes in China, which suggests that there is still no publication of a pioneering portfolio or blocking patents. Despite the limitation of the analysis, collaborative relationships between the different actors were also not identified.

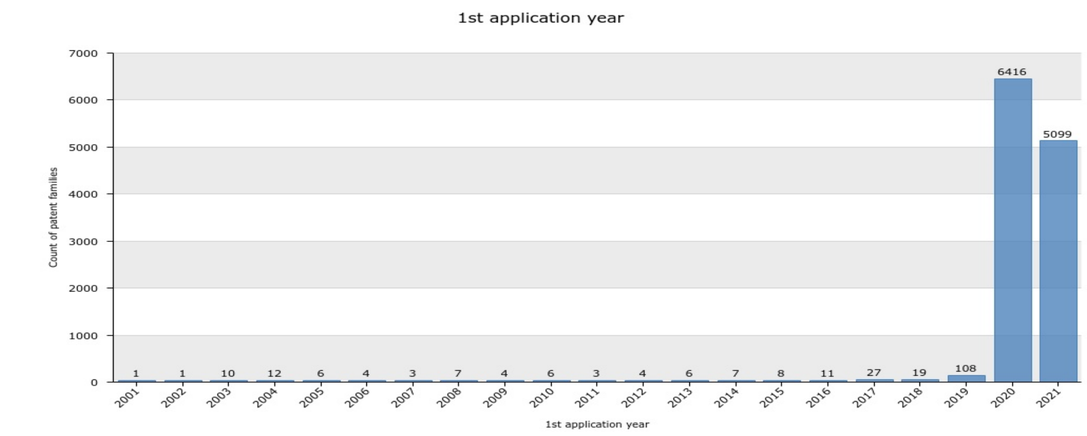

Figure 1: The evolution of applications over time

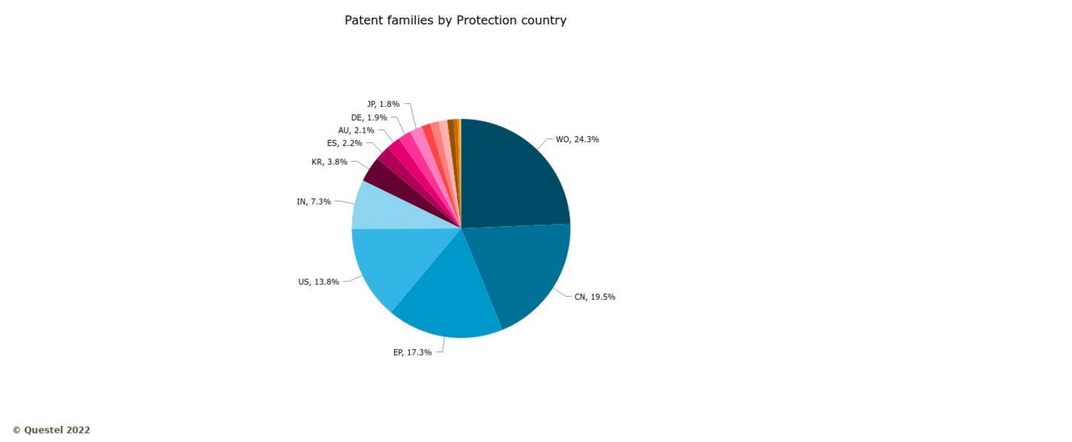

Figure 2: Countries in which the assignees publish the most

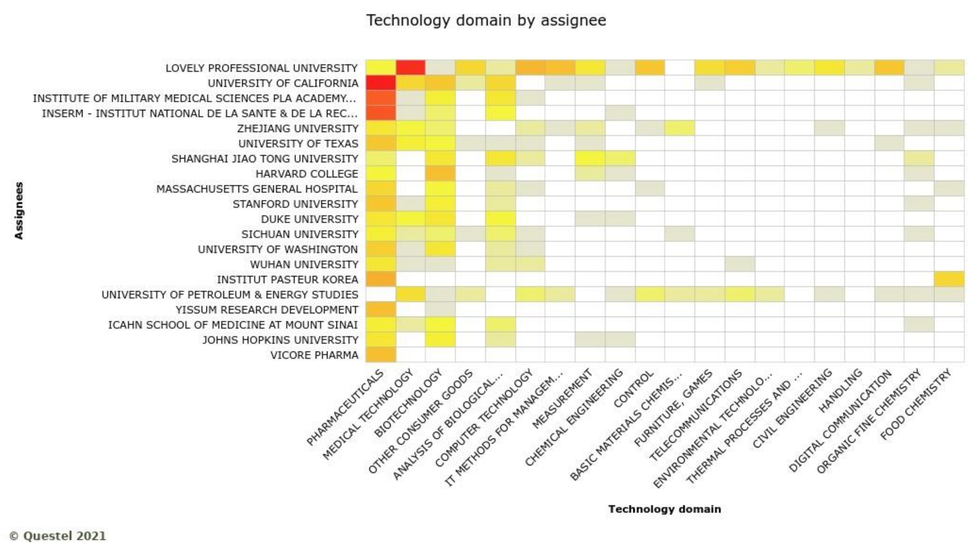

Figure 3: Main technology areas protected by top applicants

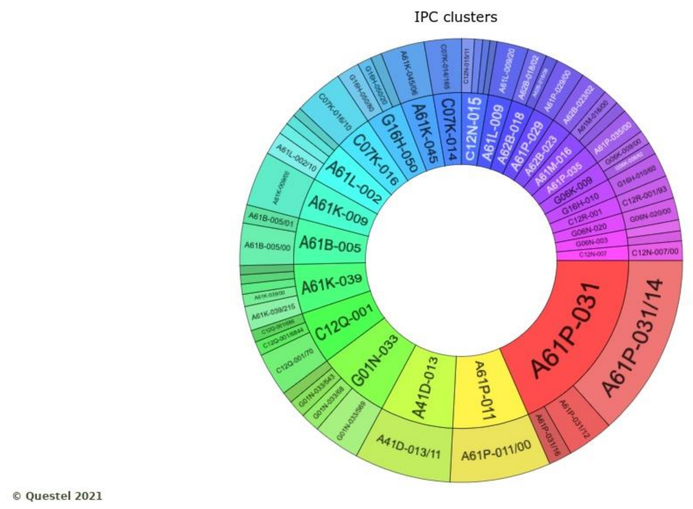

Figure 4: Main IPC codes from patents being analyzed

Conclusions

Evaluating invention patents related to COVID-19 demonstrates a broad geographic and technological scope with a high degree of inventiveness based on basic science. Science could evolve more rapidly and disruptively by intensifying scientific and technological collaborations between universities, research institutes, and the pharmaceutical industries.

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