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The Compulsory Licensing for Exploiting Patented COVID-19 Pharmaceutical Treatment: Legal Approaches of Some Arab Countries

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ABSTRACT

This article deals with exploitation of a pharmaceutical patent to treat the novel coronavirus. The laws of several Arab nations, which regulate industrial property rights in regard to the use of compulsory licensing for exploiting patented COVID-19 pharmaceutical treatments, are examined, compared, and contrasted. The cases in which such laws permit use of compulsory licensing are clarified, such as in the interest of national security and in emergencies. This article concludes that the COVID-19 pandemic has posed a serious threat to the public health of various countries which has justified the use of compulsory licensing to exploit new patents. A patent owner has the right to be granted appropriate compensation during exploitation, and the new compulsory license terminates once the purpose for which it has been given terminates.

1. CONCEPT AND TYPES OF PHARMACEUTICAL PATENT

It is known that patents[1] play an effective role in protecting the rights of patent owners, including the owners of pharmaceutical patents. The pharmaceutical patent plays a key role in protecting drug companies, as it represents the certificate proving the rights of these companies for the drugs that they invented and tested. Additionally, the patent is considered a document upon which these companies rely to prevent others from violating their rights and which allows them to claim compensation in the event of infringement.

The pharmaceutical patent can be defined as an official document granted by a competent government agency to an inventor for a pharmaceutical invention after fulfilling certain legal conditions, and it proves that the inventor has ownership rights to the pharmaceutical invention, where an inventor can solely or through others use such invention for a specific period of time. As can be seen from this definition, the pharmaceutical patent does not differ from a normal patent save that its scope is focused on medicines intended to treat diseases. The pharmaceutical patent grants an inventor a set of monopoly, moral, and material rights which enable him to exploit the pharmaceutical patent directly or through others and to perform legal actions thereon,

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[1] *See* Article 1 of the UAE Federal Law No. 31 for the Year 2006 Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs; Article 2 of the Jordanian Patent Law No. 32 of 1999 and its amendments.

such as selling and mortgages. In order for the inventor to exercise such patent rights, the pharmaceutical patent must be registered for protection purposes. Hence, the patent constitutes the creation (not disclosure) of a right.[2] It should be noted here that the material aspect ceases to exist after the lapse of a certain period,[3] which may vary from one nation's law to another's. The Emirati law, like the Jordanian and Egyptian laws, provides protection for 20 years of the financial rights,[4] where these laws adopt the minimum level of protection set out in the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement.[5]

After the entry into force of the TRIPS Agreement, countries expanded their definitions of the forms of patents subject to protection to include the types of inventions discussed below.

1.1. Invention of a new pharmaceutical product

A pharmaceutical invention results in a new material thing whose properties, composition, or industrial characteristics differ from any of the similar pharmaceutical products even if they are of the same type.[6] A completely new pharmaceutical product is created and such a product is distinguished by its qualities and characteristics from the products that currently exist, such as the invention of a new drug to treat, for example, coronavirus, AIDS, cancer, *etc.*, so that new formulation does not include those drugs that are produced as a result of modification of an existing pharmaceutical product unless such modification would affect the essential aspect of the existing pharmaceutical product.[7]

1.2. Invention of a new manufacturing method for producing medicines

This is done by inventing a new method for manufacturing a previously known pharmaceutical product, and the novelty here is the production method, not the pharmaceutical product.[8] The patent owner has created a new manufacturing method that was not previously known to produce an existing and known product, so that the protection is provided to the manufacturing method and not the product resulting from use of such a method. If the product resulting from the new manufacturing method is protected under patent laws, then the inventor of the manufacturing method is only permitted to use such a method in the production of that product only after its duration of protection has expired.[9]

The question that arises here is if the new method is focused on producing a protected product, will the patent for the manufacturing method be granted from the date of obtaining the patent, or should it be delayed until the product duration of protection expires?

This hypothesis was not covered by the laws in question, or by the provisions of the TRIPS Agreement. This article argues that starting to calculate the duration of protection for the manufacturing method before the expiry of the product's duration of protection prejudices the inventor's right to the new manufacturing method, since the inventor will not be able to exercise the monopoly right to such a method until the product duration of protection expires. Thus, the inventor will be prevented from investing in the patent, so the patent becomes useless and the inventor will not receive the expected benefit. Hence, justice, legislative rationale, and the purpose behind protection require calculating the duration from the date when the inventor of the manufacturing method becomes free to invest and exploit the invention. However, the legal provisions provide for a specific duration of protection for all patents from the grant date of patent. This article argues that inventions should be granted temporary protection until they are released from the restriction of non-exploitation to give the patent from that date in a way that serves the interests of the inventor and without prejudice to the legal rules thereon.

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[2]*See* Dana Hama Baqi Abdel Kader, Intellectual Property Rights Related to New Varieties of Plants and Pharmaceutical Products: A Comparative Study 483 (Shatat Publishing and Software House, Egypt, 2009).

[3]It should be noted that this period does not include moral or literary rights, which are permanent and non-expiring rights.

[4]*See* the text of Article 14 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs; Article 17 of the Jordanian Patent Law; Article 9 of the Egyptian Law No. 82 of 2002 Relating to the Protection of Intellectual Property.

[5]*See* Article 33 of the Agreement on Trade Related Aspects of Intellectual Property Rights or the so-called TRIPS Agreement of 1994, which entered into force at the beginning of January 1995.

[6]Muhammad Abu Al-Hija and Raafat Salah Ahmad, Patents Between Jordanian and Egyptian Legislation and International Agreements 63 (World of Modern Books, Irbid, 2006). Muhammad Ibrahim Musa, Patents in the Field of Medicines, 85 (New University Publishing House, Alexandria, 2007).

[7]Yousrya Abdel-Jalil, The Rights of Patent Holders and Utility Models 16 (Knowledge Foundation, Alexandria, 2000).

[8]Muhammad Abu Al-Hija and Raafat Salah Ahmad, *supra* note 6, at 65.

[9]Salah Zain Al-Din, Explanation of Industrial and Commercial Legislation 36 (House of Culture for Publishing and Distribution, Amman, 2003).

1.3. The new application of known manufacturing methods for the production of a pharmaceutical product

This does not mean creating a new manufacturing means, but to use a known method to achieve a new previously unknown purpose or known results that were previously achieved by other means.[10] Here, we have an existing pharmaceutical product and an existing manufacturing method, and the invention is to use such known means, without modification, to have a pharmaceutical product that differs from the product that is produced in the same manner, where such invention includes novel function and work; for example, the use of a drug used to kill microbes in order to improve animal reproduction.[11]

This applies to current attempts to obtain a patent as a result of the use of several existing drugs to treat the effects of the novel coronavirus, such as dexamethasone, which is used to treat tumors, arthritis, asthma, and respiratory diseases, as well as the use of anti-malarial drugs such as chloroquine and hydroxychloroquine. Nevertheless, the patent does not prevent others from using the same means to produce a new product, but it prevents others from using that means for the same purpose, and prevents producing the same product even if through the use of new means.[12]

This article argues that patenting a new use is not appropriate; because it lacks the novelty requirement, it cannot be argued that novelty is focused on the new use of the drug—the manufacturing application actually exists but novelty and an element of secrecy do not. Additionally, the inventor does not use a known manufacturing means to manufacture a different product: rather, the inventor finds a new use for the same product, which is not sufficient to grant protection as a patent. Further, recognition of such patents would open the way for pharmaceutical companies to circumvent the prescribed duration of protection, especially since many medicines have several uses.

1.4. Additional pharmaceutical patent

This patent is based on the idea that an inventor introduces modifications or improvements to a pre-existing pharmaceutical invention, whether the modifications are introduced by the original inventor or by another inventor. The legal protection is only granted for the improvement or modification that was made unless such modification or improvement cannot be protected independently, in which case the entire pharmaceutical invention is protected. Even if it seems fair to protect everyone who introduces amendments or improvements that would serve the accumulation of function or value in the pharmaceutical fields, this type of patent may be exploited by major pharmaceutical companies to extend the duration of protection when improvements or modifications are introduced shortly before the end of protection for the underlying pharmaceutical invention in order to have monopoly rights to the product for an additional period of time. The laws in question contain different provisions on this phenomenon.

The Jordanian legislature adopts a critical attitude towards additional patents, as it requires that the original inventor be the owner of the modifications or improvements in order to obtain the additional patent. Accordingly, such patents are only granted to the original inventor, and it remains effective throughout the remaining period of the original patent as long as the original patent protection has not expired.[13]

Some jurists[14] support this attitude on the pretext that the additional patent cannot be invested in isolation from the original patent. However, this article argues that the Jordanian legislature erred when it restricted the patent grant to the original inventor. This approach prevents other people from obtaining a patent for amendments or improvements; since most of the inventions created by citizens of developing countries, including Jordan, are in the form of improvements and modifications, this restriction would reduce or eliminate

[10]Muhammad Abu Al-Hija and Raafat Salah Ahmad, *supra* note 6, at 67.

[11]Naeem Maghbab, The Patent for Industrial and Commercial Property 84 (Al-Halabi Legal Publications, Beirut, 2003).

[12]Samiha Al-Qalyoubi, Industrial Property, Patents—Industrial Designs and Trademarks—Trade Name and Merchant Name 65 (Dar Al-Nahda Al-Arabiya, Cairo, 1996).

[13]*See* Article 18 of the Jordanian Patent Law and its amendments.

[14]Salah Al-Din Jamal Al-Din, State Contracts for the Transfer of Technology, a Study Within the Framework of Private International Law and International Trade Law 72 (Dar Al-Nahda Al-Arabiya, Cairo,1966). Anas Sayyed Attia, Legal Guarantees for Technology Transfer to Developing Countries and Their Affiliated Projects, a Study in the Framework of Law for the Prevailing International System 125 (Dar Al-Nahda Al-Arabiya, Cairo, 1996), Al Shafia Jaafar Muhammad Al-Shalali, The Legal Regulation of Patent Exploitation—A Comparative Study, 80–85 (Dar Al-Kotob Al-Qanouneia, Egypt, 2011).

the opportunities for developing nations to patent inventions in general and pharmaceutical inventions in particular.

On the contrary, in accordance with Article 1 of the Egyptian Law on the Protection of Intellectual Property, and Article 4 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs, additional patents are independent of the original patents. Accordingly, the additional patents do *not* expire upon expiration of the original patents and are not affected by the reasons for their expiration. Their independence extends to include rights and obligations, and to grant the owner of the original patent and others the right to make modifications and improvements.[15]

2. COMPULSORY LICENSE FOR EXPLOITING THE PHARMACEUTICAL PATENT

After obtaining a pharmaceutical patent, an inventor is granted the necessary protection for a specific period under the law. During such a period, an inventor is entitled to exploit the invention in the way(s) he deems appropriate.[16] However, an inventor is obligated in some cases to grant others the right to use the invention, where the competent authority grants others a compulsory license to exploit the patent without the consent of the patent owner. Thus, the exploitation of the patent is carried out by obliging the patent owner to authorize others to exploit the invention under a decision issued by the competent authority in the state for fair compensation.

The compulsory license for exploiting the pharmaceutical patent by others is one of the forms of exploitation that takes place against the will of the patent owner and constitutes a restriction on drug protection. Though the exploitation of the invention is considered one of an inventor's rights, it is also an obligation to exploit the pharmaceutical invention to address the health needs required in the state. If an inventor fails to implement this obligation, the state has the right to grant compulsory licenses when the conditions for granting such licenses are met.[17] What does compulsory licensing mean? What are the cases that justify granting those licenses? Is it possible to grant compulsory licenses for the pharmaceutical patent for the coronavirus vaccine? What is the possibility of granting more than one compulsory license in this case? Did the legislature take into account the interest of the patent owner for the coronavirus vaccine when granting the compulsory license? And does the granted compulsory license remain effective despite the absence of reasons for granting it? These questions will be answered below.

2.1. Definition of compulsory license

Having reviewed the TRIPS Agreement and the Arab comparative laws in question, it is noticed that they did not define the compulsory license. They only explained the cases in which a compulsory license is granted, conditions for a compulsory license, and the competent licensing authority.[18]

Jurists have provided many definitions of the compulsory license, but they have not agreed on a standard definition. According to some jurists,[19] the compulsory license means,

> An administrative action taken to address the breach of the obligations of an administrative contract concluded between an inventor and the public authority for implementing an invention to satisfy the needs of public utilities, and this action leads to replacing the original inventor with others without his consent in order to implement his innovation in return for a fair compensation and the invention remains in the name of the first owner.

The compulsory license is also defined as: "to deprive a patent owner of the patent rights and grant such rights to another person, the state or otherwise, if the patent owner fails to exploit his invention, or for the interest of national security or emergencies in return for a fair compensation."[20] Additionally, the compulsory license means "an

[15] *See* Dana Hama Baqi Abdel Kader, *supra* note 2, at 490.

[16] See Nisreen Cheriqi, Intellectual Property Rights, Copyright and Related Rights—Industrial Property Rights, 288 (Belkis Publishing House, Dar Al-Bayda, Algeria, 2014).

[17] Muhammad Abu Al-Hija and Raafat Salah Ahmad, *supra* note 6, at 219.

[18] *See* Article 31 of the TRIPS Agreement; Article 24 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs; Article 22 of the Jordanian Patent Law and its amendments; and Article 23 of the Egyptian Law on the Protection of Intellectual Property.

[19] *See* Al Shafia Jaafar Muhammad Al-Shalali, *supra* note 14, at 166.

[20] Abdullah Al-Khashroum, *The Impact of Jordan's Accession to the World Trade Organization: WTO in the Jordanian Industrial and Commercial Property Legislation*, 26(2) Journal of Law (Kuwait University) 296 (June 2002).

action taken under a decision issued by the court based on an application submitted to it by any person wishing to invest the invention."[21] It can also be defined as "the grant of a permission to someone else by the competent authority to exploit the patent without consent of the patent owner under the provisions of the law for an appropriate compensation."

The mere possibility of granting a compulsory license to others should induce the patent owner to exploit the invention for the benefit of society. If it is not possible for the inventor to do so, he should grant an optional license to others. Otherwise, a compulsory license is granted to others without the permission of the patent owner to benefit society. The compulsory license prevents the patent owner from abusing the exclusive right to exploit the patent by himself or by third parties in order to achieve public benefits that require the use of pharmaceutical inventions to meet health requirements or other interests.

It is known that the right to the patent is temporary, and the exploitation of the pharmaceutical patent is an inventor's right and duty at the same time, and that public interest takes priority over the inventor's personal interest whenever the need arises. The right of the inventor under the patent is closer to monopoly than ownership. The latter is based on permanence and release in use, disposition, and exploitation, in contrast to the inventor's right to his invention whose use is subject to some restrictions. In certain cases, the state has the right to grant others a compulsory license to exploit the subject matter of the patent, and such licenses derive their legal basis from international agreements and national laws.[22]

At the international level, the TRIPS Agreement developed a general framework for compulsory licenses, where it used the term *other uses* without obtaining the consent of the patent holder in place of the term "compulsory license." The TRIPS Agreement left the detailed provisions for the national laws of the member states, provided that the provisions of Article 31 of the Agreement are observed. Though Article 30 of the Agreement provides that grant of a compulsory license should not unreasonably conflict with a normal exploitation of the patent, Article 31 provides for grant of a compulsory license and the cases in which it is granted. This is a restriction on the authority of states to grant compulsory licenses, although this is in the interest of developed countries, unlike developing countries, given differences and competitive and economic capabilities on the one hand, and technical and technological inequality on the other hand. It should be noted that the cases that justify the granting of compulsory licenses are not exhaustive. This was also emphasized by the Declaration on the TRIPS Agreement and Public Health,[23] which took into consideration the serious negative effects that may result from the application of the TRIPS Agreement on public health in developing countries where deadly epidemics and many diseases spread, because of the monopoly of new medicines and the control of their prices by manufacturers. Therefore, according to Article 31 of the TRIPS Agreement, member states have the right to grant compulsory licenses in cases other than those stipulated in the Agreement when the conditions for granting those licenses are fulfilled.

The issue of a compulsory license is regulated by the domestic laws at the level of the three national laws in question, similar to other comparative laws. The Emirati legislature regulates compulsory licensing in Articles 24–32 of the Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs, and grants the Minister of Economy the authority to grant the compulsory license, as the Minister explains conditions, cases, and procedures for granting the compulsory license. The Jordanian legislature also regulates compulsory licensing for the exploitation of the patent in Articles 22–26 and gives the Minister of Industry and Trade the authority to grant compulsory licenses for exploitation of patents. Further, the Egyptian legislature regulates the compulsory licensing in Articles 23–25 of the Intellectual Property Protection Law and requires that the Patent Office is responsible for granting compulsory licenses for exploiting patents if the

[21]Saad Muhammad Saad, *Legal Means for Investor's Exploitation Of Patents*, at 39 (paper presented in the Symposium on Intellectual Property and Methods for Resolving Its Disputes, Sana'a, July 12–13 (1999).

[22]*See* Salah Zain Al-Din, *supra* note 9, at 102; Nisreen Cheriqi, *supra* note 16, at 296; Anas Sayyed Attia, *supra* note 14, at 155; Al Shafia Jaafar Muhammad Al-Shalali, *supra* note 14, at 28; Salah Al-Din Jamal Al-Din, *supra* note 14, at 89.

[23]Adopted by the WTO Ministerial Conference of 2001 in Doha on November 14, 2001. For more details on the proceedings of this conference, *see* Husam Al-Din Al-Saghir, Doha Declaration Issued by the Fourth Ministerial Conference of The World Trade Organization and Pharmaceutical Products, the WIPO National Training Seminar on Intellectual Property for the benefit of Egyptian diplomats, organized by the World Intellectual Property Organization (WIPO), Cairo Institute for Diplomatic Studies, January 29–31, (2007), at 12 and after.

conditions stipulated in Article 24 are met, subject to the rules and procedures specified in the implementing regulations.

2.2. The legal nature of compulsory licensing of a patent

There is no agreed-upon opinion on the legal nature of compulsory licenses. There are different jurisprudential opinions. Some jurists argue that the compulsory license is a license contract for exploiting a patent that belongs to the licensee and is under the supervision and control of the licensing authority. Accordingly, a relationship, similar to the relationship established under the optional licensing contract, is established. However, there is a key difference between these two relationships in terms of content and extent of the obligations of the parties. Optional licensing is based on the mutual agreement between the licensor and the licensee. This mutual agreement is, however, not required in compulsory licensing, as it is carried out without the consent of the patent owner, and is accordingly not a contract.[24]

Some jurists argue that the legal nature of the compulsory licensing is based on economic considerations,[25] and that the basis for the obligation of exploitation is due to the conditions of the patents' legal protection system and their development, as well as the desire of national laws to increase domestic production and profit. However, this is not a legal basis upon which a compulsory license is granted to exploit a patent in which the patent owner has a monopoly right.

Other jurists argue that the basis of compulsory licensing is based on the theory of the abuse of a patent owner's monopoly right,[26] where the patent owner is not permitted to abuse such a right. If a patent owner does not exploit the patent, or such exploitation is not sufficient to meet the needs of society, then the owner is deemed to be abusive in using the monopoly right, and this requires granting others a compulsory license to exploit the patent. However, adoption of such theory makes the compulsory license a penalty imposed on the patent owner. This is inconsistent with receipts by the patent owner of a fair compensation when the invention is compulsorily exploited. Also, this theory cannot be accepted when the compulsory license is granted to achieve the public interest.

This study argues that the compulsory licensing is only a legal action taken by a competent authority under the law, which determines cases of its application and the provisions of each case so that the public interest takes priority over the interest of the patent owner in exercising the monopoly right to exploit the invention. If inventions are not exploited, there is no need to declare them or to grant patents for such inventions. According to society, the patent is not an end, but a means to benefit from the invention. If the patent owner deviates from or fails to achieve such an objective, or the public interest requires exploiting the invention, then the competent authority has the right to achieve such interest through the compulsory licensing. The invention, for which the patent is granted, as well as the compulsory license, is granted by force of law whenever the conditions necessary for granting them are fulfilled.

2.3. Cases where a compulsory license is granted to exploit the pharmaceutical patent

A compulsory license is only granted to others according to certain cases and conditions that require state intervention, represented by the competent authority, to grant such a compulsory license to others against the will of the patent owner and without the patent owner's consent. These cases differ from one type to another. However, they are all based on one reason: namely, non-exploitation of the patent by the patent owner. These cases include non-exploitation or insufficient exploitation, correlated licenses, unfair competition, requirements of legal security, or emergencies.

2.3.1. Non-exploitation or insufficient exploitation of the patent. When any patent is granted, including a pharmaceutical patent, the patent owner is supposed to exploit[27] such a patent for a set period, during which the patent owner has a monopoly on exploiting it, and others are prohibited from infringing on that right by any means, and such infringement is punishable under the law.

In contrast, a patent owner is required to exploit the invention to serve the public interest to the maximum extent possible. If the patent owner

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[24]Samiha Al-Qalyoubi, *supra* note 12, at 258, Samir Al-Fatlawi, Exploiting the Patent 77 (Freedom for Printing and Publishing, Baghdad, 1987), Muhammad Mukhtar Briiri, The Commitment to Exploit New Innovations 253 (Dar Al-Fikr Al-Arabi, Cairo, 1998).

[25]Al Shafia Jaafar Muhammad Al-Shalali, *supra* note 14, at 186.

[26]Samiha Al-Qalyoubi, *supra* note 12, at 267, and Husam Al-Din Al-Saghir, *supra* note 23, at 10, and Muhammad Mukhtar Briiri, *supra* note 24, at 256, and Al Shafia Jaafar Muhammad Al-Shalali, *supra* note 14, at 189.

[27]For more details about the meaning of exploitation *see* Al Shafia Jaafar Muhammad Al-Shalali, *supra* note 14, at 166.

is completely unable to exploit the invention, or if the patent owner exploits it for a while and then ceases to exploit it for a certain period of time, this will cause serious harm to society. In this case, the state is required to eliminate the harm and achieve the desired goal of patenting. This goal is achieved by granting a compulsory license to another person who is able to exploit the invention without the need for consent of the patent owner. Granting this right to others is due to the fact that the patent owner has been completely unable to exploit the invention, or has insufficiently exploited it to meet the country's needs due to the poor financial and technical capacities of the inventor that prevent exploitation of this invention as required.

For this reason, Article 31(f) of the TRIPS Agreement permits the granting of a compulsory license for the purposes of providing the invention in the domestic markets. Under TRIPS Agreement, the member states are obliged to observe the provisions of Articles 1–12 of the Paris Convention. Article 5 of the Paris Convention provides that each country has the right to take legislative measures providing for the grant of compulsory licenses to prevent abuses which might result from the exercise of the exclusive rights conferred by the patent, such as non-exploitation. However, a compulsory license may not be applied for on the grounds of non-exploitation or insufficient exploitation before the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last.[28]

According to the TRIPS Agreement and Paris Convention, the national industrial property laws of the countries in question obligate the patent owner to exploit the invention during the duration of protection (20 years) from the date of filing the patent application. Hence, full industrial exploitation must begin within a maximum of three years from the date of the grant of the patent, unless there are justified reasons not to do so. If the exploitation of the invention is not continuous or is not sufficient for the needs of the market, then such exploitation is unacceptable. In this case, a compulsory license is granted to someone else to exploit the invention. Article 24 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs provides for the grant to others of a compulsory license to use the patented invention if the patentee fails to exploit the invention or if such exploitation is insufficient without a valid excuse, provided three years from the date of the grant of the patent have lapsed.[29]

Article 22 of the Jordanian Patent Law of 1999 and its amendments grants the Minister[30] of Industry and Trade the right to grant a compulsory license to exploit the patent if such a patent has not been exploited by the patentee or if the exploitation has been insufficient before the lapse of three years from the date of granting the patent or four years from the date of filing of the patent application.

Additionally, Article 23 of the Egyptian Law on the Protection of Intellectual Property[31] permits the Patent Office, upon consent of a ministerial committee formed under a decision of the Prime Minister, to grant compulsory licenses to exploit the invention if the patentee has failed to exploit the patent in Egypt or if such exploitation has been insufficient before the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last. According to paragraph (4) of the said Article, the compulsory license is granted if the patentee has ceased to exploit the patent for more than one year without a valid excuse. This addition in the Egyptian Law, unlike the Emirati and Jordanian laws, indicates that the Egyptian legislature is keen to keep continuous exploitation of the invention, where it, in terms of the legal effect, does not differentiate between cessation, non-exploitation, and insufficient exploitation. It should be noted here that despite the expiration of either of the legal periods, non-exploitation should be based on legal, technical, or economic reasons out of control of the patentee.

It is noticed that a specific period is given to the inventor to be ready and to provide equipment and raw materials, or to determine the party to whom an optional license for a pharmaceutical patent is granted. In accordance with the Emirati, Jordanian, and Egyptian Laws, this period is four years from the date of the application or three years from the date of granting the patent, whichever is longer. If such a period expires without exploiting the pharmaceutical patent, then it is reasonable to authorize the state to issue compulsory licenses in that field.

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[28] *See* MUHAMMAD AL-AMIN AZZA, COMPULSORY LICENSE TO EXPLOIT PATENTS AND THE IMPACT OF THE TRIPS AGREEMENT 66 (Mansoura, Dar Al-Fikr and Law, 2010).

[29] *See* Article 24 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs.

[30] *See* Article 22(1) of the Jordanian Patent Law and its amendments.

[31] *See* Article 23(1) of the Egyptian Law on the Protection of Intellectual Property.

Accordingly, the owner of a pharmaceutical patent is given a specific period to exploit the patent, and if such a patent is not exploited within such a period, any person will have the right to apply for a compulsory license with the competent authority. Such authority examines each application separately, and it has the right to give an additional period to the patentee if it finds that the non-exploitation[32] is due to justified economic, legal, or technical reasons. The additional period depends on the existence or absence of the reason. This also applies to the insufficient exploitation of the pharmaceutical patent. Undoubtedly, this eliminates the pretext on the part of pharmaceutical companies that register more than one product and more than one manufacturing method with the aim of preventing others from using such products or methods.

2.3.2. Licensing for correlation between inventions. The correlated invention means the existence of two inventions and the exploitation of each depends on the other, as each of them is not exploited separately. In other words, each of these two inventions is complementary to the other as the benefit from each invention separately is incomplete without the use of the other invention.

This case may be included in cases of national need. Thus, the mere correlation of the two inventions is not sufficient to grant a compulsory license. Rather, there must be a national need for a subsequent patent in order to authorize the owner of such a patent to obtain a compulsory license for the previous patent. Further, the license may not be assigned to others unless the correlated patent is assigned, since this type of license is more related to the patent than the patentee.[33]

The Emirati and Egyptian Laws[34] adopted the provision of Article 31(f) of the TRIPS Agreement, where a compulsory license is granted to the patentee whose invention involves a significant technical development, has an economic importance, and cannot be exploited without exploiting another patent, so that the other patent is compulsorily exploited. The legal provisions in this case do not differ from the cases of granting compulsory licenses in the UAE and Egyptian laws, but it is not provided for in Jordanian law.

It is to be noticed that the interdependence or correlation of the two inventions is insufficient to obtain a compulsory license. Rather, an invention must involve a significant technical development and have an economic value, and such invention is difficult to exploit without exploiting another invention. If these requirements exist, then a compulsory license can be granted to such inventions. In contrast, the owner of a compulsorily licensed patent is entitled to obtain a license on reasonable conditions for the exploitation of the other invention, and the compulsory license for either patent may not be assigned without assigning the other patent.

2.3.3. Compulsory license in the event of unfair competition. If a patentee abuses the rights in a manner that prevents fair competition, a compulsory license can be granted. If a patentee follows practices aimed at monopolizing the market (such as unreasonable reduction of price of the product, prevention of technical training in a way that negatively affects fair competition, or other anti-competitive practices), this constitutes a justification for the state to grant compulsory licenses.[35]

The Egyptian legislature[36] has addressed this case and adopted a set of flexible standards that would support the issue of compulsory licenses. It has also included many cases that harm society within the concept of unfair competition.[37] Similar to the Jordanian legislature, the Emirati legislature did not define cases of unfair competition. It only indicated that practices are anti-competitive to grant a compulsory license, provided that necessary judicial and administrative measures are taken to verify existence of such practices, so that a license is not used as a pretext to infringe on a patentee's rights.[38]

Regulating such cases in the Arab comparative laws is desirable, in order to prevent pharmaceutical companies from using "cut-off patents" and thus

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[32]*See* Article 24(2) of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs; Article 22(2) of the Jordanian Patent Law and its amendments; and Article 23(4) of the Egyptian Law on the Protection of Intellectual Property.

[33]*See* Abdullah Al-Khashroum, *supra* note 20, at 206.

[34]The provisions for licensing for the link between inventions are mentioned in Article 30 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs; Article 22(2) of the Jordanian Patent Law and its amendments; and Article 23(6) of the Egyptian Law on the Protection of Intellectual Property.

[35]*See* Nisreen Cheriqi, *supra* note 16, at 150, and Dana Hama Baqi Abdel Kader, *supra* note 2, at 536.

[36]*See* Article 23(5) of the Egyptian Law on the Protection of Intellectual Property.

[37]*See* Muhammad Al-Amin Azza, *supra* note 28, at 83, and Nisreen Cheriqi, *supra* note 16, at 76.

[38]*See* Articles 5–8 of UAE Federal Law No. 4 of 2012, On the Regulation of Competition, as well as Articles 5–8 of the Jordanian Competition Law No. 33 of 2004.

prevent them from purchasing all patents related to their area of production and registering a large number of patents without actually using them for the purpose of unfair competition.[39]

2.3.4. Compulsory license for the requirements of national security or emergencies. A state of national emergency declared in a country is one of the most important cases where the state can exploit, or order others to exploit, the invention, in order to address the emergency situation. These situations include, without limitation, the spread of diseases and epidemics that require production of certain medicines, like COVID-19,[40] which has spread in most countries of the world, as many countries have declared a state of emergency to confront the spread of the epidemic.

On January 31, 2020, the World Health Organization (WHO) declared the outbreak of the novel coronavirus in China to be a public health emergency of international concern, with the aim of preventing or limiting the spread of the disease across borders. The epidemic quickly spread in many countries of the world, including the United Arab Emirates, Egypt, and the Hashemite Kingdom of Jordan, where these countries, similar to other countries in the world, declared a state of emergency and took strict measures to prevent its spread.

Article 2 of the UAE Federal Law No. 14 of 2014 on Combating Communicable Diseases, provides that the state is responsible for protecting public health. Hence, the UAE has made efforts to develop and implement strategic plans to combat and prevent the spread of the epidemic and has taken into account the balance between requirements of public health and the rights of individuals according to the International Health Regulations. Further, Article 22(a) of the Jordanian Public Health Law No. 47 of 2008, as amended, permits the Minister of Health to take all necessary measures to combat the outbreak and prevent the spread of any epidemic disease in the Kingdom. Article 23 of the same law permits the Minister to issue the necessary instructions to implement epidemiological control measures to prevent disease outbreaks in the Kingdom and prevent their transmission to other countries by land, air, and sea, and to implement relevant international agreements to which the Kingdom is a party. Article 18 of the Egyptian Constitution[41] also affirms the state's role in providing integrated health care in accordance with quality standards.

The Emirati legislature permits the Minister of Economy to issue a decision on the compulsory license to exploit the patent if the invention significantly serves the public interest. The UAE legislature did not precisely define the state of emergency; rather, it adopted the concept of public interest. Declaration of the state of emergency does not serve the public interest, but termination of such a state does. Thus, the state of emergency was declared as a result of the spread of an epidemic in various countries of the world, and all measures were taken to confront its spread and mitigate its effects. If a specific anti-virus drug is invented, the competent minister will issue a decision regarding the compulsory license to exploit the invention without prior negotiation with the patent holder.[42] Likewise, the Jordanian legislature authorizes the Minister of Industry and Trade to grant a compulsory license to exploit the patent, without consent of the patentee to respond to the emergency.[43]

The Egyptian Law on the Protection of Intellectual Property is more precise in this regard. The Egyptian legislature authorizes the patent office, upon consent of a ministerial committee formed under a decision of the Prime Minister, to grant compulsory licenses to exploit the patent[44] in the event that such patent achieves noncommercial public benefit purposes (such as preserving health, environmental safety, and national security) in order to respond to the emergency situation, taking into account the realization of the legitimate interests of others without unreasonable prejudice to the rights of the patent owner. This also applies in case of lack of quantity of patented drugs or low quality of such drugs, or an extraordinary increase in their prices, or if the invention relates to medicines for critical cases or chronic or incurable diseases or to products used in the prevention of these diseases, and whether the invention relates to medicines or their method of production, or to the materials used in their production, or the method of preparation of the materials necessary for their production.

[39]Abdullah Al-Khashroum, *supra* note 20, at 201.

[40]The novel coronavirus that emerged in Wuhan, China, dates back to the end of December 2019, and has spread throughout the world.

[41]*See* Article 18 of the Egyptian Constitution issued in 2014.

[42]*See* Article 27(2) of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs.

[43]*See* Article 22(A) of the Jordanian Patent Law and its amendments.

[44]*See* Article 23(1–2) of the Egyptian Law on the Protection of Intellectual Property.

It is noted that Arab comparative laws in question did not require the licensing authority to make efforts to obtain a license from the patent owner. In other words, the license is granted without the need for the patent owner's approval[45]. This article argues that this process is used due to the nature of the case in which the license is compulsorily granted, and which cannot be delayed (emergency). Entering into negotiations with the patent owner may take a long time to reach an agreement. At the same time, granting the compulsory license to respond to emergency situations and for the purposes of public interest does not cancel the patent owner's right to obtain fair compensation.

Finally, this study argues that providing for the current situation in Arab patent laws is necessary for community protection. It is a legislative obligation which makes the state more capable to accomplish its health and social goals by establishing a legal basis that makes the state more capable to control its health-related future for the good of its people. This is since rigorously enforcing the exclusive right of the patent owner would affect the duty undertaken by the state, so the state should not stand idle while its and its people's interests are compromised.

2.3.5. Multiple compulsory licenses. The Emirati legislature followed a distinct approach in this regard, where Article 26 provides that the grant of a compulsory license does not prevent the grant of additional compulsory licenses. The Egyptian legislature followed the same approach, where Article 24 provides that the license is exclusive to those who request it unless the patent office decides otherwise. Thus, the legislature has given discretionary power to the patent office to provide more than one license for the same patent. Likewise, Article 23 of the Jordanian law provides that compulsory licenses are not exclusive, which means that more than one compulsory license can be granted for a particular patent.

This article argues that forbidding the competent authority from granting more than one license would not be proper, because the compulsory license aims to fulfill a specific need but granting only a single license may not be sufficient to address the need. For example, if a drug is created to treat COVID-19, the grant of only one compulsory license would almost certainly be insufficient to meet the community's needs as a result of the increasing number of cases in various countries of the world. Thus, it is recommended that the reasons for granting licenses should be balanced so that the state can grant more than one compulsory license when necessary.

2.4. Balancing between the requirements of the global public interest and the legitimate interest of the patentee in compensation

Usually, compulsory licenses are not required when the patented product is available in the local markets, unless the product is available under conditions and at prices that are inconsistent with the rules of fair competition.

In Article 31, the TRIPS Agreement defines the conditions and controls under which a compulsory license can be granted, and the practical effect of those controls that might make the manufacturing countries benefit from the compulsory licenses while the non-manufacturing countries do not benefit from these licenses due to lack of capabilities.[46]

It is also noted that the TRIPS Agreement does not obligate the concerned authorities to grant a drug license to a national person, as it may be granted to a foreign person. This is in order to expand coverage of the pharmaceutical needs of developing countries in light of the potential lack of national expertise and capabilities that would be able to receive compulsory licenses in industries such as the pharmaceutical industry.

A serious and effective step was taken in this regard prior to the Cancun Ministerial Conference, where the General Ministerial Council of the World Trade Organization (WTO) approved a decision that would provide adequate facilities for developing countries, as it allows them to import generic medicines[47] at low cost depending on the compulsory licensing system. According to that decision, any member state is allowed to produce generic copies of patented medicines under a compulsory license to export these products to the eligible importing countries. This decision complements the Doha Declaration and clarifies the steps necessary to improve access to essential medicines.[48]

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[45] *See* Article 22 of the Jordanian Patent Law and its amendments, which is similar to Article 27(2) of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs, as well as Article 23(1–2) of the Egyptian Law on the Protection of Intellectual Property.

[46] Bryan C. Mercurio, *TRIPS, Patents, and Access to Life-Saving Drugs in the Developing World*, 8 MARQUETTE INTELL. PROP. L. REV. 222 (2004).

[47] For more details about the meaning of generic drugs, see DANA HAMA BAQI ABDEL KADER, *supra* note 2, at 820.

[48] Angela Anderson, *Global Pharmaceutical Patent Law in Developing Countries—Amending Trips to Promote Access for All*, BEPRESS LEGAL SERIES 17 (Working Paper 1052, 2006).

In the Doha Declaration, the member states of the WTO recognized the problem of developing countries concerning benefiting from compulsory licensing due to their inability to manufacture medicines. As a result, on August 30, 2003, the General Council of the WTO decided to temporarily suspend the application of paragraphs (f) and (h) of Article 31 of the Agreement in relation to pharmaceutical products; the temporary suspension decision then became a permanent decision by amending Article 31 of the Agreement. On December 6, 2005, the member states of the Council issued a decision according to which Article 31 *bis* was added to the TRIPS Agreement. Under the said Article, pharmaceutical products manufactured under compulsory license are allowed to be exported to countries that do not have the ability to manufacture medicines. In this context, it is prohibited to double the compensation granted to the patentee in case of the compulsory license, so that he will only obtain one compensation in the country that manufactured the drug under the compulsory license for the purpose of exportation. A new appendix was also added to the Agreement concerning compensation, notifications, and avoiding leakage of pharmaceutical products to countries other than those that have been granted the compulsory license to meet their needs[49].

It should be noted that the licensing authority examines each case separately, so that the grant or non-grant of a license is based on individuated consideration according to the technical and financial capacity of the applicant and the extent of its competence to produce the relative product. Such competence is not confined to possessing the financial, technological, and technical capacities; rather, it extends to include the ability to provide such capacities even if they are not immediately available to the license applicant. The applicant is not required to be able to manufacture the product but has the ability to provide it to the local market by any means. For the same considerations, the licensee is not permitted to grant or transfer the license to others by any means.[50] The laws of the countries in question did not provide for a penalty for waiver of the drug compulsory license to others. However, such a waiver is invalid and may lead to revocation of the license. In this regard, the Egyptian law permits the licensee to assign the license if such licensee assigns the whole or part of the license-related project, benefiting from the provisions of Article 31(e) of the TRIPS Agreement.[51]

This article argues that the Egyptian legislature erred in this since assignment of the project or any part of it does not lead to assigning any personal consideration, especially if such personal consideration is in harmony with the licensee's technical capacity. This can be obviously noticed if part of the project is assigned. This provision is vague, where the assignment is entrusted to the licensee and not to the competent authority, which is required to assess ability of the assignee to meet the conditions of the compulsory license.

The legitimate interests of the holder of the right in the pharmaceutical patent should be taken into account. The grant of compulsory licenses does not aim to ignore the right of the owner of a pharmaceutical patent. Though use of such licenses is permissible, such use does not deprive the owner of the right to obtain fair compensation where the economic value of the invention is taken into account when determining such compensation through a set of criteria, considering the size of the consumer market for the drug, the sums spent on the invention, the period of legal protection left, importance of the patent and degree of competition for it.[52]

The TRIPS Agreement does not expressly provide for the estimation of the value of compensation granted to the patent owner. On the one hand, developing countries will argue, in the event of any future disputes, that these licenses are temporary and their aim is to provide essential medicines to the poor in developing countries when the conditions for those licenses are met; thus, this will not cause any damage to the large pharmaceutical companies, and therefore the compensation must be low. On the other hand, the pharmaceutical companies which own patents will undoubtedly argue that the compensation must be sufficient to cover the costs of research and development and will claim the right to at-least modest profits.[53]

The amount of compensation is estimated in each case separately. As explained earlier, the Agreement did not set criteria to be used in assessing the compensation. Yet, two controls were developed to be taken into account in this regard. Firstly, each case should be separately examined when assessing the compensation. For example, compensation for pharmaceutical products created to treat COVID-19 are

[49]*See* Husam Al-Din Al-Saghir, *supra* note 23, at 16. Abdel-Rahim Antar Abdel-Rahman, The Impact of the TRIPS Agreement on the Pharmaceutical Industries 89 (Alexandria, Dar Al-Fikr Al-Jami, 2009).

[50]*See* Article 24(g) of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs.

[51]*See* Muhammad Ibrahim Moussa, Patents of Invention in the Field of Medicines 164 (New University Publishing House, Alexandria, 2007).

[52]*See* Dana Hama Baqi Abdel Kader, *supra* note 2, at 553.

[53]Bryan C. Mercurio, *supra* note 46, at 223.

not equal to cosmetics. Secondly, the economic value of the license, not to the patented pharmaceutical product, should be taken into account. The best factor in determining this value is to look at the profits that the licensee earns and to determine a certain percentage to be borne by the patent owner.[54]

This study argues that adopting this policy in determining compensation is incorrect since the economic value of the drug license is not determined by the amount of profit(s) alone. The benefits that accrue to the state as a result of issuing the license and the benefits that accrue to individuals, whether health or economic, are among the benefits for which the inventor is entitled to receive a fair compensation. If these benefits are difficult to measure, flexible standards can be set in this area to solve this problem. For example, the sums of money that the state would have spent if it had relied on parallel imports[55] or as a result of obtaining compulsory licenses.

Hence, countries must utilize the space given in determining compensation in proportion to their economic conditions without prejudice to the rights of the patent owner, given that international agreements have permitted the competent authorities to determine the amount of compensation and how it is paid, provided that the compensation is fair.[56]

The decision issued regarding the amount of compensation is subject to review by the court or any another competent authority designated by the state.[57] In this context, the Egyptian law[58] gives this authority to an independent committee in the state, while both the UAE[59] and Jordanian laws[60] grant this authority to the court. Further, these make the decision regarding issuance of the compulsory license subject to review by competent authorities in terms of whether or not the conditions are met. This is a proper conduct that would take into account the legitimate rights of the patent owner.

2.5. The compulsory license to exploit the pharmaceutical patent is limited to achieving its objective and not to monopolizing it

The proportionality between the scope and duration of the compulsory licensing of medicines and the need, for which the license was granted constitutes an effective element to ensure that the issuance of these licenses is not exaggerated, nor are the scope and duration of these licenses expanded without justification. For example, if a patent has been produced to treat the novel coronavirus and compulsory licenses granted to exploit such patents in order to respond to the current health emergency, the license period must expire when the state of emergency terminates. Accordingly, the compulsory license must be revoked when the purpose for which it was granted ceases to exist, taking into account the legitimate interests of the licensee. Therefore, the following conditions are required to terminate the license:[61]

1. Balancing between the legitimate interests of the first licensee on the one hand and the legitimate interests of subsequent licensees, on the other hand. If the competent authority grants a compulsory license and after four years grants another license for the same product or its method of manufacture, and after two years such authority wants to terminate the license, such termination will not harm the right of the first licensee, but will harm the interests of the second licensee, who may not have been able to benefit from his license and have not achieved the required returns to cover the cost of the license. In this case, the license of the second licensee should not be terminated. Otherwise, such licensees should be paid fair compensation.
2. Cessation of the circumstances for which the license was granted, and the absence of their recurrence. Therefore, the state has the right to refuse to terminate the license when there is a possibility of a recurrence of the situation for which the license was granted.

The TRIPS Agreement linked the validity of compulsory licenses to the continuity of the circumstances or reasons for granting them. The license is subject to termination if the conditions that led to its granting have ceased to exist and it is unlikely that they will recur. The national laws in question have adopted this general provision.

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[54] *See* ABDEL-RAHIM ANTAR ABDEL-RAHMAN, *supra* note 49, at 153.

[55] For more details see REEM SAUD SAMAWI, PATENTS IN PHARMACEUTICAL INDUSTRY: LEGAL REGULATION OF VOLUNTARY LICENSING IN LIGHT OF THE WORLD TRADE ORGANIZATION (W.T.O.) 134 (Dar Al Thaqafa for Publishing & Distributing, Amman, 2008), and ABDEL-RAHIM ANTAR ABDEL-RAHMAN, *supra* note 49, at 75.

[56] MUHAMMAD IBRAHIM MUSA, *supra* note 51, at 196.

[57] *See* DANA HAMA BAQI ABDEL KADER, *supra* note 2, at 553.

[58] *See* Article 24(8) of the Egyptian Law on the Protection of Intellectual Property.

[59] *See* Article 28 of the UAE Federal Law of Pertaining to the Industrial Regulation and Protection of Patents, Industrial Drawings, and Designs.

[60] *See* Article 26 of the Jordanian Patent Law.

[61] *See* ABDEL-RAHIM ANTAR ABDEL-RAHMAN, *supra* note 49, at 152.

According to Article 31(2) of the UAE law, the compulsory license is canceled by the licensing authority at the request of the patent owner if the licensee does not comply with the conditions of the license, and if the reasons for which such license is granted have ceased to exist. The licensee is given a reasonable time to cease to use the license if the immediate cessation would cause serious damage to him. Hence, the compulsory license terminates if the reasons for grant of such license cease to exist upon a decision by the competent authority or at the request of the concerned party. Article 24 of the Jordanian Patent Law permits the Minister, on his own or at request of the patentee, to revoke the license if the reasons for which it was granted cease to exist.

Article 23(8 and 9) of the Egyptian Law provide that the compulsory license terminates once its term terminates. The compulsory license may be terminated before expiration of the license term if the reasons for which it was granted crease to exist and are unlikely to exist again. The patent office can revoke the license at the request of the patentee. The patent office can, on its own or at the request of the concerned party, revoke the license if the licensee has not used to the license after two years of the date of grant, or if the licensee has failed to implement the obligations contained in the license.

This approach in the laws in question is consistent with the nature of compulsory licenses and takes into account the reasons for which such licenses were granted, and they terminate once such reasons cease to exist.

3. CONCLUSION

This study dealt with the issue of exploiting the pharmaceutical patent for treating the coronavirus by use of the compulsory license. Novel coronavirus was declared to be a pandemic that caused health, economic, and social damage to various countries of the world. It was found that the pharmaceutical patent does not differ from the normal patent except that it is focused on medicines intended to treat diseases. The pharmaceutical patent grants an inventor a set of monopoly, moral, and material rights that enable him to exploit the pharmaceutical patent directly or through others and to perform legal actions thereon. The pharmaceutical patent has several forms: invention of a new pharmaceutical product, invention of a new manufacturing method for production of drugs, discovering a new application of known manufacturing methods for production of a pharmaceutical product, or an addition or a modification to an existing pharmaceutical invention.

It was noticed that the Emirati and Egyptian legislatures make additional patents independent from the original patents, where such additional patents do not terminate upon termination of the original ones, and they are not affected by the reasons for expiration of the original patents. Such independence extends to include the rights and obligations, and to grant the original patentee and others the right to make modifications and improvements, unlike the Jordanian legislature which confines the grant of patent to the original patentee. Hence, it is recommended that the Jordanian legislature should follow the example of the Egyptian and Emirati legislatures in this regard.

In principle, the legislatures, in the laws in questions, permit the patentee who is granted a pharmaceutical patent to exploit such patent in the manner the patentee deems appropriate. However, the legislature can, under certain circumstances, oblige the patentee to grant a compulsory license to someone else for exploitation. Use of compulsory licensing is justified as it aims to prevent the patentee from abusing his exclusive rights, where the patentee might intend to not exploit, and not let someone else exploit, the patent to society's detriment. An inventor is required under the law to exploit the invention. If an inventor fails to exploit the invention at all or fails to exploit it as required, then the competent authority has the right to permit someone else to exploit the patent through compulsory licensing. This includes exploiting any correlated inventions. Further, a compulsory license is granted if the pharmaceutical patent is for treatment of diseases that threaten the public health. The laws have differed in dealing with this issue. Similar to the remaining laws in question, the Emirati legislature used the term "public interest."

The compulsory licensing of the pharmaceutical patent for treating the coronavirus is a legal means to achieve public benefit for all members of society. If a treatment for this disease is discovered, it is necessary to grant several compulsory licenses to respond to this epidemic, since granting a single license would be insufficient to accomplish the public good. Compulsory licensing is carried out according to controls preserving the patent owner's right to obtain fair compensation and ensuring termination of the period of the compulsory license once the purpose for which it is granted creases to exist.

Finally, countries are urgently required to cooperate with each other in order to discover a treatment for this epidemic, and to avoid monopoly and blackmail.

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