

Study on Supreme Court's Decision for Case No. 2019Hu10609

1. The Subject Case

- Case No.: 2019Hu10609 Invalidation Trial
- The subject patent: Patent No. 0908176, "Lactam-Containing Compounds and Derivatives thereof as Factor Xa Inhibitors"
- Date of decision: April 8, 2021

2. Gist of the Decision

(1) Criteria for determining inventive step of a selection invention

Even when the generic concept of a patent invention is known in prior art invention(s), if the patent invention is acknowledged to pose difficulty in construction, its inventive step is not denied. Even in the case of the patent invention with the claims directed to formula recited in so-called Markush format in which it is drafted such that one or more of some of the constituents constituting the selection invention may be selected as two or more substituents, and compounds that are only theoretically included within the range of the substituents but not specifically disclosed, a difficulty in constitution must be considered when determining the inventive step of the invention.

The Supreme Court's Decision held on October 15, 2009 for Case No. 2008Hu736, 743, etc. has held that: "In order not to deny inventive step of the so-called selection invention, all of the subordinate concepts included in the selection invention must have a qualitatively different effect from that of the prior art invention, or there must be a significant difference in quantity even if there is no qualitative difference. Herein, the detailed description of the invention of the selection invention should clearly state that it has such effect compared to the prior art invention."

The purport of this decision is that in the case where it is difficult to acknowledge difficulty in constitution, if there is remarkability in effect, inventive step of the invention is not denied. Therefore, the determination of inventive step should not be made based only on whether the invention has remarkability in effect, without considering difficulty in constitution, just because the selection invention discloses the generic concept of the patented invention.

(2) How to consider the effect when determining inventive step of the selection invention

When determining inventive step of a patent invention, the unique effect of the invention should be considered together. Even when any motivation or suggestion to select a specific compound among the numerous compounds theoretically included in a prior art invention is not disclosed in the prior art invention, if this is just an optional selection which has no technical significance, it is cannot be considered that there is a difficulty in selection. This is because the effect of the invention can be an important factor that can distinguish whether the section poses difficulty in constitution because there is no motivation for the selection or whether this is just an optional selection.

(3) Degree of description of the effect of the selection invention

The determination on the remarkability of the effect should be made based on the effect that is described in the specification of the patent invention and can be recognized or inferred by a person skilled in the art (refer to the Supreme Court's Decision dated August 23, 2002 for Case No. 2000Hu3234), and if the effect is doubtful, it is allowed to specifically argue and prove the effect by submitting additional experimental data after the filing date, as long as it does not exceed the scope of the description (refer to Supreme Court Decision dated April 25, 2003 for Case No. 2001Hu2740).

3. Details of the Case

(1) Facts

Regarding the oral anticoagulant Eliquis drug, the defendants (generic pharmaceutical companies) had filed an invalidation trial with the Intellectual Property Trial and Appeal Board (IPTAB), arguing that the plaintiff (original pharmaceutical company)'s substance invention for Eliquis drugs (the subject invention) does not have inventive step over the prior art invention. The IPTAB has judged that the subject invention does not have inventive step, and in response to the IPTAB's decision, the plaintiff filed a lawsuit for cancellation of the trial decision with the Patent Court.

Meanwhile, claim 1 of the subject invention relates to apixaban and a pharmaceutically acceptable salt thereof among compounds having a lactam ring.

Prior art invention, WO 00/39131, contains apixaban, which is the compound of claim 1 of the subject invention, but in order to reach claim 1 from the prior art invention, the first mother nucleus should be selected from among the 66 mother nuclei disclosed in the prior art invention, and then all substituents should be selected and combined simultaneously in the specific manner.

Accordingly, the issue of this case is whether the subject invention lacks inventive step over the prior art invention which discloses the compound in the form of a general formula in which various combinations are possible.

(2) Original judgment (Patent Court)

The Patent Court held that: The subject invention corresponds to 'a selection invention consisting only of subordinate concept included in the generic concept disclosed by the prior art invention'; and in the case of such selection invention, the determination of inventive step should be made based mainly on the effects described in the specification, while applying the strict patent requirements. However, because it is not described in the specification whether the subject invention has qualitative effects or quantitatively remarkable effects over the prior art invention, it cannot be deemed that the subject invention has such effects. Accordingly, inventive step of the subject invention is denied.

(3) The Supreme Court's judgment

However, the Supreme Court overturned the original decision on the following grounds:

- i) The prior art invention lists a variety of compounds selected from 66 mother nuclei structures, types of substituents applicable to each mother nucleus structure, and selectable atoms. In theory, the formulae presented here can include more than hundreds of millions of compounds depending on the selection of the mother nucleus structure and the combination of each substituent.
- ii) In order to reach from the compound disclosed in general formula in the prior art invention to claim 1 of the patented invention, the first mother nucleus should be selected from among the 66 mother nuclei listed without priority as the first embodiment among the compounds disclosed in the Markush type in the prior art invention, and then all the substituents of the above mother nuclei should be selected and combined simultaneously in the specific manner. In particular, the lactam ring, which is considered as the key substituent showing the effect of claim 1 of the subject invention, should be positioned at substituent B connected to the substituent A of the first mother nucleus, but the prior art invention does not specifically disclose the lactam ring. Also, there is no reason to preferentially consider the lactam ring from among the numerous structures possible as the substituent B in the 34 mother nucleus structures disclosed as 'more preferred embodiments' of the prior art invention.

iii) When the total of 107 specific compounds disclosed as 'much more preferred embodiments' of the prior art invention are reviewed, no compound that has a structure generally similar to that of claim 1 of the patented invention or a lactam ring as the substituent B can be found.

iv) According to the specification of the subject invention and the experimental data submitted after the filing date, claim 1 of the subject invention has improved Xa inhibitory activity and selectivity compared to known factor Xa inhibitors, and it improves the pharmacokinetic effect regarding absorption, distribution, stockpiling, metabolism, and excretion of drugs in vivo by controlling factors that decrease the blood concentration highest-lowest properties (cleanliness and volume of distribution) and increase the concentration of active drugs in the receptor (protein binding, distribution volume), etc. Further, it can be understood that it is an invention that improves the effect of co-administration where it is administered simultaneously with other drugs.

v) It is very difficult to predict a compound with excellent pharmacological effect based only on the chemical structure without experiment. Therefore, a person skilled in the art who develops a new compound would find a compound having improved pharmaceutical effect by going through designing a structurally similar compound or derivative based on a compound with known biological activity, synthesizing it and evaluating its efficacy. This process is repeated until a compound with better efficacy is found.

However, since the prior art invention and claim 1 of the patented invention are different in the compound of interest and the structure thereof, and it is difficult to deem that there is a reason, motivation or suggestion to preferentially or easily select the structure of claim 1 of the patented invention, a skilled person in the art would have to go through repeated trial and error combining numerous options before reaching claim 1 of the patented invention to find the optimal combination with technical value from the prior art invention.

vi) Considering all of the above, it cannot be deemed that it is easy to derive the constitution of claim 1 of the subject invention from the prior art invention without a hind-sight analysis after learning the invention of claim 1, and there are improved effects, and thus, inventive step of the invention can hardly be denied over the prior art invention.

Nevertheless, the original decision has judged that inventive step of the subject invention is denied only because it was difficult to recognize qualitative or quantitatively remarkable effects compared to the prior art invention, without considering whether or not the invention poses difficulty in constitution for the

reasons stated as above. The original decision was made by misunderstanding the legal principles of determining inventive step of the subject invention and insufficient examination, which give an influence on the judgment.

4. Our Comments

i) Regarding the determination of the inventive step of a selection invention, so far, the Supreme Court has determined inventive step, focusing on whether all of the subordinate concepts included in the selection invention have qualitatively different effects from those of the prior art invention, or whether there is a quantitatively remarkable difference, if no qualitative difference.

However, the above Supreme Court's decision has held that inventive step of a selection invention could be recognized if it is deemed to pose difficulty in constitution when applying a general method of determining inventive step. This makes it clear that the difficulty in constitution should also be considered when determining the inventive step of the selection invention, as the Supreme Court has previously judged the inventive step of the selection invention based on the effect.

The fact that the Supreme Court made the above judgment not by en banc but by minorities means that the existing principle centered on qualitative or remarkable effect is still valid as it is applied when the difficulty in constitution is not recognized. It seems to mean adding a criterion of difficulty in constitution, not changing previous court decisions. However, the Supreme Court's ruling is expected to completely change the practice so far that has been centered on effect.

ii) Meanwhile, with respect to the description of the effect of the selection invention, the Supreme Court has held that "In the specification of the selection invention, the description of the invention should clearly state that there is a qualitative or remarkable effect. In order to deem that the effect is clearly stated, the description of the invention should have specific contents demonstrating qualitative differences or descriptions demonstrating that there is a quantitatively remarkable difference (refer to Supreme Court Decision dated August 23, 2012 for Case No. 2010Hu3424). When the effect is doubtful, the applicant can specifically argue and prove the effect by submitting detailed comparative experimental data after the filing date (refer to the Supreme Court Decision dated April 25, 2003 for Case No. 2001Hu2740)."

In this regard, the above Supreme Court decision has held that the determination on remarkability of the effect should be made not based on the effect clearly disclosed in the specification, but based on the 'effect disclosed in the specification that can be recognized or inferred by a skilled person in the art,' and also held that if the

effect is doubtful, it is allowed to specifically argue and prove the effect by submitting additional experimental data after the filing date, as long as it does not exceed the scope of the description, acknowledging the improved efficacy of the patented invention based on the specification and experimental data submitted after the filing date. Accordingly, it seems that, for a selection invention having difficulty in constitution, remarkability of effect needs to be proved as with general inventions.

iii) Future prospect

In the past, it was almost always concluded that the inventive step of a selection invention is denied by the strict criteria for determining the inventive step of the selection invention. The rare exception to this was the Olanzapine ruling, which was acknowledged to have qualitative effects (Supreme Court Decision No. 2010Hu3424 dated August 23, 2012).

However, with the Supreme Court's ruling above, it is expected that the number of selection inventions with acknowledged inventive step will increase. In particular, in the pharmaceutical field, the patentability of the original drug patent would be more strengthened, in the future, when there are patent disputes between the original pharmaceutical company and the generic pharmaceutical company.