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China: Parsing the role of unexpected effect in inventiveness assessment

WU Xiaohui, 08 September 2026, First published by MIP

The Supreme People's Court has clarified that unexpected technical effects are not a prerequisite for inventiveness, offering important guidance for patent examination practice, says Wu Xiaohui of Wanhuida Intellectual Property

On July 30 2026, China's Supreme People's Court (SPC) rendered a final decision in (2025) Zui Gao Fa Zhi Xing Zhong No. 230, concluding the administrative dispute between Donald Owen and Fan Lili v China National Intellectual Property Administration (CNIPA) over the rejection of an invention patent application.

The decision is significant because the SPC used it to address a problematic practice in patent examination that erroneously ties inventiveness assessment to the presence of unexpected effect. This methodology does not follow the established 'three-step' approach in inventiveness assessment, which starts with identification of the closest prior art, followed by determination of the distinguishing feature and technical problems actually solved by the invention, and concludes with assessment of non-obviousness of the invention to the person skilled in the art.

Instead, with access to the disclosure made by an invention application, the examiner tends to presume the invention to be obvious and would thus request that the applicant attest to the 'unexpectedness' of the technical effects, in order to prove otherwise. The approach is compounded by hindsight bias and would unduly burden the applicant with a higher evidentiary threshold.

It is therefore very welcome that the SPC clarified that in the absence of a technical teaching in the prior art, the fact that the claimed invention does not achieve an unexpected technical effect is not necessarily a precondition for denying inventiveness. Setting the record straight, this decision provides significant guidance for patent examination practice, especially in the biopharmaceutical and other experimental fields.

Case background

The application at issue is invention patent application No. 201710035185.3, titled 'Oligomeric Biosurfactants in Skin Cosmetic Compositions' (the Subject Application).

On January 28 2021, the CNIPA rejected the application, based on the finding that claims 1–2 are devoid of inventive step. On May 12 2021, the applicants filed for re-examination, which was dismissed by the CNIPA on January 11 2023. The applicants then brought an administrative litigation before the Beijing Intellectual Property Court, which, on December 27 2024, upheld the re-examination decision in the first-instance proceeding. The applicants later appealed to the SPC, which issued a final judgment revoking the re-examination decision and the first-instance judgment, and ordering the CNIPA to issue a new examination decision.

Claim 1 of the Subject Application relates to the use of two specific oligomeric acylated biosurfactants (SEQ ID NO 75 and SEQ ID NO 99) in the preparation of a medicament or cosmetic product for stimulating hair growth. Reference Document 1 discloses a class of polymeric acylated biosurfactants (PAB) and specifically enumerates polymeric acylated biosurfactants selected from SEQ ID NO 1–33. Reference Document 2 discloses an isolated oligopeptide having a length of 5 to 15 amino acid residues and possessing hair growth-promoting activity. It is further disclosed that the amino acid can be replaced by any other amino acid, provided that at least one biological activity is maintained.

The re-examination decision held that the distinguishing feature of claim 1 over Reference Document 1 lies in the following: claim 1 specifies the use of the biosurfactant in the manufacture of a medicament or cosmetic product for stimulating hair growth and further specifies that the product is for topical application. Based on the technical effects achieved by the distinguishing feature, the actual technical problem solved by the claimed subject matter is to provide a new pharmaceutical use of a biosurfactant. Under the teaching of Reference Document 2, a person skilled in the art would have been motivated to select from the known amino acid residues and, through routine experimentation, to identify the oligopeptide composed of the amino acid residues recited in claim 1 (which has already been disclosed in Reference Document 1) as having hair growth-stimulating activity. Moreover, the specification of the Subject Application provides no evidence demonstrating that the acylated oligopeptide biosurfactants recited in the claims produce any unexpected effect in promoting hair growth as compared with the prior art.

Therefore, the re-examination decision concluded that the subject matter of claim 1 would have been obvious to a person skilled in the art in view of Reference Document 1 in combination with Reference Document 2 and conventional selection practices.

The SPC's findings

The SPC opined that regarding the distinguishing feature, claim 1 defines the two oligomeric acylated biosurfactants by reference to both specific amino acid sequences and sequence characteristics. The re-examination decision erred in failing to take into account the specific sequence limitations of claim 1. The SPC sided with the re-examination decision over its identification of the technical problem actually solved.

However, with respect to technical teaching, the SPC found that Reference Document 2 does not disclose SEQ ID NO 75 or SEQ ID NO 99 as defined in claim 1. Thus, it was factually incorrect for the re-examination decision to find that "the oligopeptide structures disclosed in Reference Document 1 fall within the scope of Reference Document 2". Although Reference Document 2 permits certain amino acid substitutions, it expressly states that a cysteine (Cys) residue is indispensable for hair growth activity, whereas the sequences of the Subject Application are precisely characterised by the absence of Cys. Accordingly, a person skilled in the art would not derive a reasonable expectation from Reference Document 2 as a technical teaching for achieving the Subject Application, nor would they anticipate that arbitrary substitutions would still preserve hair growth efficacy. The SPC concluded that Reference Document 2, as a whole, does not provide a technical teaching pointing to the specific sequences of the Subject Application as promoting hair growth.

In addition, the SPC held that evidence does not support the statement made by the re-examination decision that amino acids such as arginine and lysine are beneficial for hair growth. In light of the sequence differences between the Subject Application and Reference Document 2, and the absence of a technical teaching in Reference Document 2, the SPC arrived at the conclusion that in establishing inventiveness of the Subject Application, it is not a prerequisite to demonstrate the presence of an unexpected technical effect.

Comments

In patent examination, non-obviousness sits at the core of inventiveness assessment. The SPC reiterated that the three-step approach established in the Patent Examination Guidelines needs to be followed step by step in the non-obviousness assessment process. The assessment could be boiled down to the following question: whether, before knowing the invention, a person skilled in the art would have been motivated, based on the teachings of the prior art, to try to arrive at the claimed solution.

Without rigorous evaluation of obviousness based on the closest prior art, the non-obviousness assessment risks falling prey to hindsight bias. By using the Subject Application as a blueprint, the approach works backwards from the technical problem it purports to solve, piecing together multiple prior art references, presuming that "a person skilled in the art would have arrived at the solution through routine selection", thereby retroactively concluding that the claimed invention would have been obvious. This is classic hindsight bias.

In the present case, the re-examination decision denied inventiveness based on a combination of reference documents 1 and 2, yet neither document discloses SEQ ID NO 75 nor 99 of the Subject Application. Moreover, Reference Document 2 expressly states that a Cys residue is indispensable, whereas the Subject Application is precisely characterised by the absence of Cys. The alleged combination of teachings and routine selections is, at best, a failed attempt to reverse engineer the Subject Application with inside knowledge, rather than reflecting a reasonable expectation of success that a person skilled in the art would have had before the filing date.

The SPC conducted a thorough analysis as to whether Reference Document 2 provides a technical teaching and concluded that it does not. In the context of the disclosed technical solution, Reference Document 2 was

construed as explicitly underlining the indispensability of Cys for hair growth activity, whereas the sequence of claim 1 of the present application is devoid of Cys. Reference Document 2 states that the amino acids may be substituted with any other amino acids, provided that at least one biological activity is retained. However, this statement is premised on the condition that the biological activity is preserved. If the substitution of a particular amino acid would alter the overall biological activity, then such an amino acid should not fall within the scope of substitutable residues. On that basis, the court found that a person skilled in the art would have little motivation to attempt sequences devoid of Cys and would not have had a reasonable expectation that such sequences would exhibit hair growth effects. This holistic approach avoids the pitfall of taking the prior art out of context and is therefore more scientifically robust.

In patent inventiveness assessment, “whether the prior art provides a technical teaching” and “whether the invention yields an unexpected technical effect” are two fundamentally different issues. The SPC clarified in this case that the absence of technical teaching, rather than that of unexpected technical effects, serves as the prerequisite for finding inventiveness. This is corroborated by the Patent Examination Guidelines, which categorise “unexpected technical effect” as “other factors to be considered when assessing inventiveness”, rendering it less defining in the process.

This finding carries particular weight in the biopharmaceutical field, where inventions are characterised by low predictability and often rely heavily on empirical validation. It would therefore be advisable that as long as the prior art provides no clear expectation of success or no technical teaching, the inventor’s contribution in arriving at an effective technical solution through creative effort should be recognised. In a nutshell, the inventiveness embodied in the conception of a technical solution should not be negated merely due to its seemingly routine route of implementation.

In this case, the SPC also reviewed the applicant’s efficacy data and confirmed that the Subject Application had submitted experimental evidence demonstrating the effectiveness of its sequences. In the absence of a technical teaching, such evidence is sufficient to establish “significant progress”, and there is no need to satisfy the higher bar of “unexpected technical effect”. This reaffirms that in inventiveness assessment, effect data may be used as evidence to support the finding of progress, rather than being lined up as counterevidence to negate non-obviousness.

In sum, the presence of an unexpected technical effect achieved by a patent application could be used to attest to its highly inventive nature, but it is not a statutory prerequisite for establishing inventiveness. The case could serve as a useful precedent in righting the examination practice that erroneously adopts a high threshold to assess inventiveness. It is of major significance, particularly in experimental science fields, where inventors could sometimes be subject to disproportionately high evidentiary burdens in patent prosecution proceedings.