

# Importance of Prior Art in Organic Compound Patents and Current Trends and Future Obstacles

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**Abstract:** *When deciding whether or not to grant a patent for an organic compound, the examiner relies heavily on prior art to establish whether or not the chemical in question is innovative or non-obvious. In this paper, we'll look at prior art, how it affects the patentability of organic compounds and several well-known case laws that illustrate these effects. In this paper, we have highlighted issues that inventors face by analyzing recent international cases such as In re Kubin and AstraZeneca LP v. Apotex Corp., and by examining the significance of prior art searches in patent applications. This is as much advice on the profession's particular strategic approach to IP, as on how best to navigate prior art in the context of patent applications.*

**Keywords:** Patentability, organic compounds, prior art, case laws, patent applications

## 1. Introduction

Patents for organic molecules are a type of intellectual property, and so this is certainly true in the chemical and pharmaceutical sector. Aside from protecting the inventor's rights, the prospect of a patent serves as an incentive for companies to engage in R&D. Both originality and non-obviousness are required for the invention to qualify for patent protection. Nonetheless, the prior art is highly relevant under both of the reasons above.

All prior art that had been disclosed to the public before the date of the patent application counts: this includes the scientific literature, prior existing patents, conference presentations, and public use. A clear picture of relevant prior art, and the legal consequences of that art, is part and parcel of a proper protection for the work of an inventor. The paper uses a few case studies to highlight the importance of prior art in patenting organic compounds and to present some of the real-world implications for patent applicants. It highlights essential parts of this topic.

### The Significance of Prior art in organic compound patents.

#### Novelty Requirement

An organic compound must be completely new and not previously used in any form to be eligible for a patent. According to the USPTO, "prior art" is any piece of knowledge that was already in the public domain when the patent application was submitted. Prior publishing of similar or identical information about the substance may result in the rejection of the application.

Let us pretend for a second that a scientist is doing research when they come across a new chemical that is quite similar to an old one. If the first paper describes the substance's synthesis, use and potential medicinal applications, it will be difficult to prove that the researcher's version is not substantially similar. The patent office could deny their patent as a result.

#### Non-Obviousness Requirement.

A new compound is of no interest if it is not accessible to the specialist. Expertise and previous work in the field are considered when determining whether an invention is non-obvious. A claimed compound may not be patentable if a prior

study reveals that it is only an obvious modification of an existing substance.

Example: a pharmaceutical firm is interested in patenting a new medicine that alters the structure of an old one by changing the structure of a single functional group. Prior art shows several similar derivatives with known effects, one may argue that the new chemical isn't innovative enough to get a patent. This might make it more challenging for the company to prove that its chemical is truly innovative and deserves clearance.

### Legal cases demonstrating the significance of Prior Art.

#### In re Kubin (2009)

Background: The applicant in this landmark case claimed a technique for isolating a certain polypeptide from a composition that was said to be connected to a nerve development factor. Based on prior art that showed the claimed substance could be separated using well-known procedures, the USPTO rejected the application.

**Results:** The Federal Circuit affirmed the determination of the USPTO, highlighting that the innovation was evident considering the existing prior art. The court's decision highlighted the need for inventors to present strong proof that their claims go beyond using existing procedures.

#### Apotex Corp. v. AstraZeneca LP (2010)

The background is that Apotex challenged AstraZeneca's patent on the stomach acid medication omeprazole, claiming that the patent was unenforceable because of disclosures in the prior art.

The court decided in favor of AstraZeneca after taking into consideration the fact that identical compounds were present in the prior art, but that the distinctive formulation and properties of omeprazole were not immediately obvious. This particular case demonstrates that even seemingly little aspects of the prior art can have a significant influence on the patentability of a product.

#### In re O'Farrell (1999)

The background of this case is that prior art outlining identical approaches led to the rejection of the applicant's patent

application for a specific method of producing organic compounds.

The result was that the rejection by the PTO was maintained by the Federal Circuit, which further confirmed that the claimed process was adequately disclosed in the prior art. Thorough prior art investigation is crucial for considering patentability, as this case shows.

#### **Teva Pharmaceuticals USA, Inc. v. Novartis AG (2021)**

The pharmaceutical company Novartis recently attempted to have a patent on a variant of the cancer medicine imatinib enforced in a US court. Based on earlier work revealing multiple forms of imatinib, Teva asserted that the polymorph was clear.

**Conclusion:** Although there were other polymorphs in the prior art, the Federal Circuit determined that Novartis's particular polymorph had unique characteristics that were not apparent to experts in the field. This example demonstrates that even little differences in chemical properties can significantly influence patentability, despite the existence of prior art.

#### **Teva Canada Ltd. v. Eli Lilly and Company (2022)**

Teva challenged Eli Lilly's ability to patent its depression treatment in Canada, so establishing the context for the incident. The chemical was predicted by prior art, according to the rationale that Teva presented.

The Federal Court of Canada came to the conclusion that the claimed chemical was sufficiently distinct from the existing chemical knowledge to warrant the granting of patent protection to Eli Lilly. As a consequence, she was given patent protection. Taking into account functional differences in addition to direct parallels is something that should be considered when evaluating past work, as this judgment demonstrates.

## **2. Practical Implications for Patent Applicants**

### **Prior Art Searches**

To ensure that your organic compound patent is adequately supported, the first thing you need to do is do comprehensive searches of the prior art. This is the first step you need to take. The results of these sorts of searches can be useful in detecting possible impediments, which, in turn, can drive the formulation of claims and increase the possibility that they are eligible for patent protection. The utilization of broad databases like Google Scholar and PubMed, in addition to databases that concentrate on patents (such the United States Patent and Trademark Office and the World Intellectual Property Organization), may result in the acquisition of invaluable insights.

### **Claim Drafting**

That should all be pointed out in your claims, along with anything else that warrants patentability. Whenever possible, allow the language in the claims to have a traceable path back to a specific line or lines of the specification. And don't assume that lawyers and scientists you're working with will know how to avoid stumbling over language unless you point it out.

### **Defense Against Infringement**

During litigation, the validity of a patent can be contested by citing prior art. To effectively address such challenges, patent applicants and competitors must have a thorough understanding of the prior art landscape. By the same token, having a solid grasp of the prior art can be advantageous when it comes to formulating effective remedies during the litigation process. Results that were not anticipated and that differentiate the novel drug or procedure from the current body of literature or research. The use of clear and exact phrasing has a number of advantages, two of which are the prevention of misunderstandings and the strengthening of the application against challenges that are a result of previous disclosures.

## **3. In Summary**

When it comes to organic compound patenting, prior arts play a crucial role, particularly in establishing the need for uniqueness and non-obviousness. In light of the precedents set by cases like *In re Kubin* and *AstraZeneca v. Apotex* as well as more recent ones like *Novartis AG v. Teva Pharmaceuticals and Eli Lilly and Company v. Teva Canada*, this draws on what the courts have learned about the significance of earlier works of art. Prior art is still a goldmine for companies and scholars looking to safeguard their ideas, even if organic chemistry is a hot topic right now. Filing patent applications in this area requires preparation, including careful review of relevant prior art and the development of well-thought-out claims.

## **References**

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