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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RAJINDER SINGH, ANKUSH ARGADE, DONALD PAYAN,
SUSAN MOLINEAUX, SACHA J. HOLLAND, JEFFREY CLOUGH,
HOLGER KEIM, SOMASEKHAR BHAMIDIPATI,
CATHERINE SYLVAIN, HUI LI, and ALEXANDER B. ROSSI

Appeal 2018-001157
Application 13/011,407
Technology Center 1600

Before ULRIKE W. JENKS, CHRISTOPHER G. PAULRAJ, and
RYAN H. FLAX, *Administrative Patent Judges*.

PAULRAJ, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the
Examiner's decision to reject claims 72, 73, and 75 on obviousness grounds.

We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

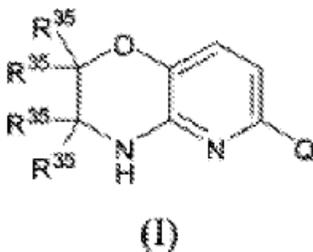
¹ We use the word "Appellant" in this Decision to refer to "[A]pplicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Rigel Pharmaceuticals, Inc. Appeal Br. 3.

CLAIMED SUBJECT MATTER

“The present invention provides 2,4-pyrimidinediamine compounds that inhibit the IgE and/or IgG receptor signaling cascades that lead to the release of chemical mediators, intermediates and methods of synthesizing the compounds and methods of using the compounds in a variety of contexts, including in the treatment and prevention of diseases.” Spec., Abstract.

Claims 72, 73, and 75 are on appeal. Claim 72 is illustrative and reads as follows:

72. A compound according to formula (I):



or a salt or N-oxide thereof, wherein:

Q is selected from the group consisting of nitro and amino; and
two R³⁵ bonded to the same carbon atom are taken together to form an oxo (=O) group and the other two R³⁵ are each, independently of one another, selected from the group consisting of halo and (C1-C6) alkyl.

STATEMENT OF THE CASE

The Examiner has rejected claims 72, 73, and 75 under 35 U.S.C. § 103(a) as being unpatentable over Lüthy.² As the claims are not separately argued, we focus our discussion on independent claim 72, which is representative.

In an earlier appeal, Appeal 2012-011037, we affirmed the Examiner's prior obviousness rejection of the same claims based on Lüthy and denied Appellant's Request for Rehearing. In our Rehearing Decision, we noted the following:

Appellant[] present[s] a modified version of Lüthy Table B2 as Exhibit A to the Request for Rehearing. The modified table includes a new column, added by Appellant[], which purportedly “displays the average post-emergence herbicidal action of each compound for all plants tested” (Req. Reh'g, 2). In addition, Appellant[] states that “the table has been re-sorted from the best to worst based on this average herbicidal action” (*id.*). We have considered Table B2 of Lüthy both in the Decision and in evaluating the instant Request for Rehearing; we observe, however, that absent circumstances not present here, the reliance on new evidence, such as the column newly added by Appellant[] to Lüthy Table B2, is not permitted in a request for rehearing. 37 C.F.R. § 41.52.

See Appeal No. 2012-011037, Dec. on Req. for Rehearing, 2 n.2 (PTAB Mar. 1, 2016).

In the present Appeal, Appellant asks us to consider this same modified version of Lüthy Table B2, now as timely-raised evidence of non-obviousness. *See* Appeal Br., Evidence App.

² Lüthy et al., WO 01/30782 A2, published May 3, 2001.

FINDINGS OF FACT

We adopt the findings of fact set forth in our prior Decision on Appeal (FF 1–8). *See* Appeal No. 2012-011037, Dec. on Appeal, 4–6 (PTAB Sept. 14, 2015). We add the following findings regarding Appellant’s new evidence, which we deem timely presented in this Appeal:

- FF9. In the Evidence Appendix of the Appeal Brief, Appellant has included a modified version of Lüthy Table B2, in which: (a) a column has been appended to the right of the table in which each cell displays the post-emergence herbicidal activity of the compound of that row averaged over all weeds against which the compound was tested, and (b) the rows of the table have been sorted from those having the best average herbicidal activity to those with worst average herbicidal activity.
- FF10. As shown in Appellant’s modified table, the average post-emergence action for all plants species for Lüthy’s compound 1.048 is 3.6, which is the worst among the tested compounds included in Lüthy Table B2, according to the scoring system of the reference.

PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and

(4) objective evidence of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

A determination of whether a new chemical compound would have been obvious over the prior art typically follows a two-part inquiry that first considers “whether a chemist of ordinary skill would have selected the asserted prior art compounds as lead compounds, or starting points, for further development efforts,” and second, analyzes whether there was a reason to modify a lead compound to make the claimed compound with a reasonable expectation of success. *Otsuka Pharm. Co. v. Sandoz, Inc.*, 678 F.3d 1280, 1291–92 (Fed. Cir. 2012).

ANALYSIS

In the prior appeal, we determined that the Examiner made a prima facie showing of obviousness based on the evidence of record at the time. As noted above, however, we did not previously consider Appellant’s arguments with regard to the modified version of Lüthy Table B2 because they were not timely made in that appeal. Having now considered that evidence as part of the present record, we determine that the Examiner has not demonstrated obviousness of the claimed compounds.

In the rejection on appeal, the Examiner contends that compounds II.058 are II.059 disclosed in Lüthy’s Table II are appropriate lead compounds for further modification because the reference discloses them as intermediates for making herbicidal compound 1.048, which shows **very good herbicidal action on 6 out of 9 tested plants** (i.e. scoring a rating from 1 to 3) according to Table B2. Ans. 5. Once compound II.058 or compound II.059 is selected as the lead compound, the Examiner contends that one of ordinary skill in the art would have reason to modify the

compound so that both R₃ and R₄ are alkyl groups, thereby arriving at the claimed compound. *Id.* at 7.

Appellant contends that, when taking the average herbicidal activity across all plant species tested, “compound 1.048 has the worst herbicidal activity and, therefore, [would have been] the least worthy of further study” among the 211 “preferred” compounds identified in Lüthy. Appeal Br. 5. Appellant further contends that consideration of the average activity across all weeds tested is relevant because “Lüthy is directed to non-selective herbicides,” citing Lüthy, 119, and “the ordinary artisan interested in a non-selective herbicide would be most interested in compounds having high activity against multiple weed species.” *Id.*

We are persuaded by Appellant’s arguments based on the present record. In particular, the Examiner has not provided a sufficient reason why one of ordinary skill in the art, without the benefit of hindsight knowledge of the claimed compound, would have chosen Lüthy’s compound II.058 or compound II.059 as a lead compound for further modification. Although the Examiner identifies those compounds as intermediates for producing herbicidal compound 1.048, the Examiner does not satisfactorily address Appellant’s argument that compound 1.048 has the worst herbicidal activity and, therefore, is the least worthy of further study.

The Examiner contends that compound II.058 and compound II.059 are appropriate lead compounds because “the compounds have a utility, namely as intermediates for making structurally similar herbicidal compositions of formula (I).” Ans. 8. We agree with Appellant that the mere fact that a compound might have utility as an intermediate for producing herbicides does not necessarily mean that it qualifies as an

appropriate lead compound for further modification. Reply Br. 2; *see In re Lulu*, 747 F.2d 703, 706–07 (Fed. Cir. 1984) (determining that utility of prior art compounds as intermediates did not provide a motivation sufficient to support obviousness rejection based on structural similarity).

The Examiner contends that one of ordinary skill in the art would have chosen compound 1.048 because it is one of two compounds listed in Table B2 having R₂ as hydrogen, with good biological properties. Ans. 10. But, other than the fact that the claimed compounds themselves have a hydrogen in the corresponding position, the Examiner does not provide any reason why the skilled artisan would have focused on compound 1.048 merely because of the hydrogen in the R₂ position. We agree with Appellant that this rationale is improperly based on hindsight knowledge of the claimed compound rather than what was known in the prior art. There must be a “reasoned identification” of the lead compound. *Eisai Co. v. Dr. Reddy’s Labs., Ltd.*, 533 F.3d 1353, 1359 (Fed.Cir.2008) (“[P]ost-KSR, a prima facie case of obviousness for a chemical compound still, in general, begins with the reasoned identification of a lead compound.”); *see also Otsuka Pharm.*, 678 F.3d at 1292 (“Absent a reason or motivation based on such prior art evidence, mere structural similarity between a prior art compound and the claimed compound does not inform the lead compound selection.”).

In view of Appellant’s new evidence of record, we determine that the Examiner has not demonstrated that one of ordinary skill in the art would have chosen compounds II.058 or II.059 as lead compounds for further modification merely because they could be used to make herbicidal compound 1.048 disclosed in Lüthy. Because we determine that the

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Examiner has failed to identify a proper reason to select compounds II.058 or II.059, we need not address whether there would be further reason to modify these compounds to arrive at the claimed compound.

CONCLUSION

We reverse the rejection of claims 72, 73, and 75 under 35 U.S.C. § 103(a) as being unpatentable over Lüthy.

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
72, 73, 75	103	Lüthy		72, 73, 75

REVERSED