



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/867,689	10/05/2007	Paul L. Prather	110 030US1	9512
66981	7590	01/30/2013	EXAMINER	
HUGH MCTAVISH MCTAVISH PATENT FIRM 429 BIRCHWOOD COURTS BIRCHWOOD, MN 55110			BAEK, BONG-SOOK	
			ART UNIT	PAPER NUMBER
			1629	
			MAIL DATE	DELIVERY MODE
			01/30/2013	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAUL L. PRATHER and JOHN P. CROW

Appeal 2012-002091
Application 11/867,689
Technology Center 1600

Before JEFFREY N. FREDMAN, JACQUELINE WRIGHT BONILLA,
and ULRIKE W. JENKS, *Administrative Patent Judges*.

JENKS, *Administrative Patent Judge*

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a cannabinoid receptor modulator to treat a neurodegenerative disease, specifically, amyotrophic lateral sclerosis. The Examiner has rejected the claims for containing new matter and anticipation. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

“There are two known cannabinoid receptor sub-types, CB1 and CB2. CB1 receptors are expressed throughout the central nervous system (CNS), while CB2 receptors are expressed predominantly in immune cells and nonneuronal tissues.” (Spec. ¶ 0003.) The Specification describes “selective CB2 modulators [that] act as efficacious pharmacological agents with several distinct advantages for the management of neurodegenerative diseases. One benefit of potential selective CB2 modulation therapy for neurodegenerative diseases is that significant therapeutic effects are observed even when selective CB2 modulators are initiated at symptom onset.” (Spec. ¶ 0030.)

Claims 1, 5, 6, and 26 are on appeal, and can be found in Appendix I of the Appeal Brief (App. Br. 8, 9). Independent claim 1 is representative:

1. A pharmaceutical composition for the treatment of a neurodegenerative disease in a human, the composition comprising (i) a selective CB2 receptor modulator in a unit dosage form in a dosage effective to treat the neurodegenerative disease in a human and (ii) a pharmaceutically acceptable excipient; wherein the neurodegenerative disease is amyotrophic lateral sclerosis.

The Examiner has rejected the claims as follows:

- I. claims 1, 5, 6, and 26 under 35 U.S.C. § 112 first paragraph, as containing new matter; and
- II. claims 1, 5, 6, and 26 under 35 U.S.C. § 102(b) as unpatentable over Ibrahim.¹

¹ Ibrahim, *Activation of CB₂ cannabinoid receptors by AM1241 inhibits*

Appeal 2012-002091
Application 11/867,689

As Appellants do not argue the claims separately, we focus our analysis on claim 1, and claims 5, 6, and 26 stand or fall with that claim. 37 C.F.R. § 41.37 (c)(1)(iv).

I.

The Issue

The Examiner takes the position that “[t]he specification only mentions about vehicles such as olive oil for injectable compositions in the examples (p17, [0058]). The newly added limitation, ‘a pharmaceutically acceptable excipient’ is broader than the original ‘vehicle’ disclosure.”

(Ans. 5.)

Appellants contend:

A pharmaceutical composition implicitly and inherently comprises a pharmaceutically acceptable excipient. In addition, paragraph 58 discloses that the drugs “have poor water solubility and require a vehicle which is both capable of dissolving the drug and is biocompatible.” Several specific vehicles are listed in paragraph 58, including ethanol/water, glycerol and high purity olive oil. A pharmaceutical “vehicle” has the same meaning as “a pharmaceutically acceptable excipient.” *Webster's New World Dictionary*, second college edition, 1979, defines “excipient” as “any of various inert substance added to a prescription to give the desired consistency or form” That seems to have the same meaning as a pharmaceutical vehicle.

(App. Br. 5.)

Does the evidence of record support the Examiner's conclusion that

experimental neuropathic pain: Pain inhibition by receptors not present in the CNS, 100 PNAS 10529-10533 (2003).

Appeal 2012-002091
Application 11/867,689

the disclosure of the Specification failed to provide descriptive support for a “pharmaceutically acceptable excipient”?

Finding of Fact

The following finding of fact (FF) is supported by a preponderance of the evidence of record.

1. The Specification disclosed:

All drugs and vehicle were administered once daily by the i.p. route beginning the first day of symptom onset. AM-1241, AM630, JTE-907 and WIN- 55,212-2 have very poor water solubility and require a vehicle which is both capable of dissolving the drug and is biocompatible (with chronic dosing). Other groups have used complex vehicles composed of polyethoxylated vegetable oils and/or ethanol/glycerol/water mixtures. We tested a number of traditional vehicles such as ethanol/water, glycerol, polyethylene glycol, and high purity olive oil. Stable dissolution of AM-1241, AM630, JTE-907 and WIN-55,212-2 was achieved only with olive oil, thus it was selected as the vehicle for these studies. Two different concentrations of AM-1241 (1 mg/ml and 0.1 mg/ml) and one WIN-55,212-2 concentration (1 mg/ml) were prepared in order to minimize the volume of olive oil that was injected IP.

(Spec. ¶ 0058.)

Principle of Law

“[T]he written description requirement does not demand either examples or an actual reduction to practice; a constructive reduction to practice that in a definite way identifies the claimed invention can satisfy the written description requirement.” *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010).

Analysis

The Examiner position is that the newly added limitation of a “pharmaceutically acceptable excipient” is new matter (Ans. 5.) The Examiner argues that Appellants’ points are unpersuasive (*id.* at 7-8).

The standard to be applied is “whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.” *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983). Applying that standard, we find that the evidence (FF1) supports Appellants position, for the reason provided in the Appeal Brief (App. Br. 4-5). The new matter rejection of claims 1, 5, 6, and 26 is reversed.

II.

The Issue

The Examiner takes the position that “Ibrahim *et al.* teach an injectable composition (a pharmaceutical composition) comprising AM1241 in a unit dosage (0.1, 0.3, 1.0, and 3 mg/kg) with a pharmaceutically acceptable excipient such as dimethyl sulfoxide as recited in the instant invention, thus it would be capable of performing the intended use as claimed.” (Ans. 6.)

Appellants contend that “Ibrahim does not disclose or suggest that AM1241 is effective to treat ALS.” (App. Br. 6.) “The structural differences defined by these functional limitations - a pharmaceutical composition comprising a pharmaceutically acceptable excipient and comprising a

selective CB₂ receptor modulator in a unit dosage form effective to treat ALS - are not disclosed or suggested by Ibrahim” (App. Br. 6), and that “[t]he claims recite ‘a unit dosage form’ for a human” (*id.* at 7). Finally, Appellants assert that “[n]onsterile or nonpharmaceutical grade DMSO would not be a pharmaceutically acceptable excipient.” (*Id.* at 6-7.)

Does the Examiner establish by a preponderance of the evidence (either expressly or inherently) that Ibrahim anticipates the claims?

Further Findings of Fact

The following findings of fact (FF) are supported by a preponderance of the evidence of record.

2. Ibrahim disclosed “AM1241, a selective CB₂ cannabinoid receptor agonist, and used it to test the hypothesis that CB₂ receptor activation would reverse the sensory hypersensitivity observed in neuropathic pain states. AM1241 exhibits high affinity and selectivity for CB₂ receptors. It also exhibits high potency *in vivo*.” (Ibrahim Abstract; Ans. 5.)

3. Ibrahim disclosed that “[c]annabinoid drugs were dissolved in dimethyl sulfoxide [DMSO]. AM630 is a CB₂ receptor-selective antagonist with 70- to 165-fold selectivity for binding to the CB₂ receptor *in vitro* (18, 19). AM251 is a 300-fold selective CB₁ receptor antagonist (20, 21). Drugs were administered i.p. 15 min before behavioral testing.” (Ibrahim 10530; Ans. 6.)

4. Ibrahim disclosed that:

Our data demonstrate that activity of CB₁ cannabinoid receptors is not required for the inhibition of neuropathic pain by AM1241. They do not, however, fully exclude the involvement of other receptors. For example, a putative receptor has recently been described in brain that is modulated by the cannabinoid receptor agonist WIN55,212-2 but has different pharmacological properties from the CB₁ receptor and is not inhibited by the CB₁ receptor-selective antagonist AM251 (34). To date, this receptor has not been cloned, and its interactions with cannabinoid ligands have not been characterized.

(Ibrahim 10533.)

5. Ibrahim disclosed intraperitoneal (i.p.) administration of AM1241 in mice and rats at dosages of 0.1 mg/kg (100 µg/kg), 0.3 mg/kg (300 µg/kg) (Ibrahim 10531, *see* Fig. 2; Ans. 5), 1 mg/kg (Ibrahim 10532, *see* Fig. 4; Ans. 5), and 3 mg/kg (Ibrahim 10532, *see* Fig. 5; Ans. 5).

6. The Specification disclosed that “[m]ice were administered daily i.p. injections, beginning at onset of symptoms, with one of four treatments; vehicle (Fig. 4A-C, n=9), the relatively non-selective CB₁/CB₂ agonist WIN-55,212-2 (5 mg/kg, Fig. 4A, N=6), the selective CB₂ partial agonist AM-1241 (0.3 mg/kg, Fig. 4B, N=14) or AM-1241 (3 mg/kg, Fig. 4C, N=14).” (Spec. ¶ 0079.)

Principle of Law

“[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art’s functioning, does not render the old composition patentably new to the discoverer.” *Atlas*

Appeal 2012-002091
Application 11/867,689

Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347 (Fed. Cir. 1999). Thus, the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254 (CCPA 1977).

Analysis

We are not persuaded by Appellants' argument that there are structural differences defined by functional limitations in claim 1. The claim 1 requires the following limitations: "treatment of a neurodegenerative disease in a human" and "wherein the neurodegenerative disease is amyotrophic lateral sclerosis." These limitations are interpreted by the Examiner to be intended use limitations (Ans. 6). "[T]he patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). We agree with the Examiner's conclusion that the claim is directed to a composition, specifically, a selective CB2 receptor modulator, for example such as AM1241, specifically recited in dependent claim 26. The recited use of the composition does not impart any structural features onto the CB2 receptor modulator that would distinguish it from any other CB2 receptor modulator of the prior art.

We agree with the Examiner's finding that Ibrahim disclosed the use of AM1241 in animals. Specifically, Ibrahim injected rats or mice i.p. with AM1241 (FFs 2,3) at dosages of 0.1, 0.3, 1 and 3 mg/kg (FF5), where the compound was mixed with DMSO (FF3). The administration of "AM1241

Appeal 2012-002091
Application 11/867,689

reversed SNL-induced tactile and thermal hypersensitivity in rats and in mice.” (Ibrahim 10531.) The Specification disclosed the i.p. administration of AM1241 in mice at dosages of 0.3 mg/kg and 3 mg/kg (FF6), where the compound was mixed with olive oil (FF1). Thus, the experimental conditions in Ibrahim and the Specification use the same route of administration, i.p., to provide the same drug AM1241 at the same concentration, albeit with a different pharmaceutical vehicle, to either rats or mice. The discovery of the previously unappreciated property of AM1241 on halting the disease progression in amyotrophic lateral sclerosis, even after the onset of symptoms in a mouse model, does not change the structure of the old composition, in this case AM1241. *See Atlas Powder*, 190 F.3d at 1347.

Appellants acknowledge that “[sterile, pharmaceutical grade dimethyl sulfoxide (DMSO)] is a pharmaceutically acceptable excipient.” (App. Br. 6.) However, Appellants contend that “there is no evidence that this [sterile DMSO] was what was used in Ibrahim for experiments with rats.” (*Id.*) We are not persuaded by Appellants’ argument that “pharmaceutically acceptable excipient,” as recited in claim 1, does not encompass the DMSO vehicle used in Ibrahim, i.e., an acceptable excipient in animals. “Attorneys’ argument is no substitute for evidence.” *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1581 (Fed. Cir. 1989). Moreover, there is no evidence, in this record, that the ordinary artisan would have understood that

Appeal 2012-002091
Application 11/867,689

it was routine procedure in the pharmaceutical art to use non-sterile DMSO² when administering composition to an animal.

We conclude that the preponderance of the evidence of record supports the Examiner's conclusion that Ibrahim anticipates the composition of claim 1. We thus affirm the anticipation rejection of claim 1 under 35 U.S.C. § 102(b). As claims 5, 6, and 26 stand or fall with claim 1, we affirm the rejection as to those claims as well.

SUMMARY

We reverse the rejection of claims 1, 5, 6, and 26 under 35 U.S.C. § 112, first paragraph.

We affirm the rejection of claims 1, 5, 6, and 26 under 35 U.S.C. § 102(b) as being anticipated by Ibrahim.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

² The FDA lists DMSO as an inactive ingredient for approved drugs, and this includes infusion products, injection suspensions, as well as topical drug applications; <http://www.accessdata.fda.gov/scripts/cder/iig/getiigWEB.cfm> (last accessed January 28, 2013).