Karen A. Confoy
Cali R. Spota
FOX ROTHSCHILD LLP
Princeton Pike Corporate Center
997 Lenox Drive
Lawrenceville, NJ 08648
Tel: (609) 896-3600
Fax: (609) 896-1469
kconfoy@foxrothschild.com
cspota@foxrothschild.com

Attorneys for Defendants
Padagis Israel Pharmaceuticals Ltd, Padagis US LLC, and Padagis LLC

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

BAUSCH HEALTH IRELAND LIMITED, BAUSCH HEALTH US, LLC; and BAUSCH HEALTH AMERICAS INC., Plaintiffs, v. PADAGIS ISRAEL PHARMACEUTICALS LTD; PADAGIS US LLC; and PADAGIS LLC, Defendants.	Civil Action No. 22-4248 (MCA) (AME) **CONTAINS HIGHLY CONFIDENTIAL-ATTORNEYS' EYES ONLY INFORMATION**

DEFENDANTS PADAGIS ISRAEL PHARMACEUTICALS LTD, PADAGIS US LLC, AND PADAGIS LLC's AMENDED INVALIDITY CONTENTIONS

IPR2023-01114
Padagis v. Bausch
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wherein the concentration of the carbomer homopolymer is 0.5-0.7 percent by weight of the composition for the reasons described previously. *Supra* §IV.D.1.

The '824 publication disclosed a vehicle comprising an oil-in-water emulsion lotion comprising an aqueous phase that comprises water and a carbomer homopolymer, wherein the concentration of the carbomer homopolymer is 0.5-0.7 percent by weight of the composition. Formulation 4A of the '824 publication disclosed a vehicle for an oil-in-water emulsion lotion comprising an aqueous phase that comprises water and Carbopol 981 (Carbomer Homopolymer Type A) at 0.60% by weight of the composition. '824 publication at Table 4. A person of ordinary skill would have been motivated to formulate 0.045% tazarotene in the oil-in-water emulsion lotion vehicles of the '824 publication, particularly Formulation 4A in Table 4, with a reasonable expectation of success for the reasons described previously. *Supra* §IV.E.1.b.

The use of carbomer homopolymers at concentrations of 0.5-0.7 percent by weight in topical pharmaceutical compositions was well known in the art prior to May 2017. The 2008 Pharmaceutical Bulletin No. 8, entitled Emulsification Properties, was prepared by the makers of Pemulen. ("Bulletin"). Bulletin described the use of Pemulen, such as TR-1 (carbomer copolymer type B) and TR-2, to form highly stable oil in water emulsions for use in topical creams. Typical usage levels of Pemulen are between 0.1-0.3 %. Bulletin described that Pemulen could be used in combination with Carbopol polymers (typically at 0.2-0.6%) to thicken the formulations. *Id*. at 3, 6; *see also* Tegeli at 54-56. Selecting a carbomer homopolymer as an emulsifier or thickener for formulating lotions would have been obvious to one of ordinary skill in the art. *See, e.g.*, Bulletin at 1. Further, the use of carbomers, such as Carbopol 981 (carbomer homopolymer type A), in topical formulations was generally known in the art.[4] For example, the '847 patent disclosed compositions which may contain a retinoid and a polyacrylic polymer acid, such as a Carbopol polymer (e.g., Carbopol 981), in an amount of 0.05-1.0%. *See* '847 patent at 4:22-5:5, 6:17-54. In view of the common usage of carbomers in topical formulations, one of skill in the art would have been motivated to include a carbomer homopolymer in a tazarotene formulation, and would have been able to arrive at the claimed amount using routine optimization in view of the concentrations disclosed in the prior art.

Accordingly, in view of the prior art and the knowledge of a person of skill, a person of ordinary skill would have found it obvious to formulate a topical composition comprising tazarotene at about 0.045% in an oil-in-water emulsion lotion comprising an aqueous phase comprises water and a carbomer homopolymer, wherein the concentration of the carbomer homopolymer is 0.5-0.7 percent by weight of the composition.

[4] *See, e.g.*, 2011 Lubrizol Reference Information; TDS-114 2007 Pemulen Technical Data Sheet, Tazorac Label; '020 publication at 9:5-6; '028 patent at 4:39-52 and 4:53-67; '753 publication at 8:10-37 (tazarotene formulation comprising carbomer); '578 Patent at 4:20-43; '942 patent at 2:55-57; Handbook at 10 (disclosing carbomers in a concentration of 0.1-0.5% emulsifying agent).

f. Polymeric Emulsifier

Claim 1 further requires that the composition further comprises a polymeric emulsifier at a concentration of 0.3-0.5 percent by weight of the composition. WO '001 disclosed an oil-in-water emulsion lotion comprising 0.045% tazarotene and a polymeric emulsifier at a concentration of 0.3-0.5 percent by weight of the composition for the reasons described previously. *Supra* §IV.D.1.

A skilled artisan would have also been motivated to use a polymeric emulsifier, such as a Pemulen polymeric emulsifier, to formulate a topical composition comprising about 0.045% tazarotene given the well-known advantages that such emulsifiers were known to provide. The use of polymeric emulsifiers at concentrations of 0.3-0.5 percent by weight in topical pharmaceutical compositions was well known in the art prior to May 2017. *See, e.g.*, Tegeli at 56 (disclosing that pemulen polymeric emulsifiers typically require low concentrations of only 0.1-0.3%); 2011 Lubrizol Reference Information; TDS-114 2007 Pemulen Technical Data Sheet; Tazorac Label; '020 publication at 9:5-6; '028 patent at 4:39-52 and 4:53-67; '753 publication at 8:10-37 (tazarotene formulation comprising carbomer); '578 Patent at 4:20-43; '942 patent at 2:55-57; Handbook of Pharmaceutical Excipients at 110 (disclosing carbomers in a concentration of 0.1-0.5% emulsifying agent). Bulletin described the use of Pemulen, such as TR-1 and TR-2, to form highly stable oil in water emulsions for use in topical creams. Typical usage levels of Pemulen are between 0.1-0.3 %. Bulletin at 3. Bulletin described that Pemulen could be used in combination with Carbopol polymers (typically at 0.2-0.6%) to thicken the formulations. *Id*. at 6. Selecting Pemulen as the polymeric emulsifier in a lotion composition would have been obvious to one of ordinary skill in the art, as lotions containing Pemulen form an immediate occlusive layer on the skin. *See id.* at 3. The prior art taught numerous advantages of using Pemulen polymeric emulsifiers for topical pharmaceutical formulation including that they provide efficient suspension and stabilization of insoluble materials; they can be used "with almost any oil phase"; they have high stability; they require low concentrations, typically only 0.1-0.3%; they do not cause irritation; they provide rapid release of the oil phase onto the patient's skin, helping to provide rapid delivery of the active into the patient's skin; and they can enable new dosage forms for insoluble materials. Tegeli at 56-57; Bulletin at 2-3. A person of ordinary skill would have therefore been motivated to use a Pemulen polymeric emulsifier in a topical composition comprising about 0.045% tazarotene. A skilled artisan would have been able to arrive at the claimed amount using routine optimization in view of the concentrations disclosed in the prior art.

The '824 publication disclosed a vehicle comprising an oil-in-water emulsion lotion comprising a polymeric emulsifier at a concentration of 0.3-0.5% by weight of the composition. Formulation 4A of the '824 publication disclosed a vehicle for an oil-in-water emulsion lotion comprising Pemulen TR-1 at 0.40% by weight of the composition. '824 publication at Table 4. The '824 publication disclosed that Pemulen is a polymeric emulsifier. *Id.* at [0024]. A person of ordinary skill would have been motivated to formulate 0.045% tazarotene in the oil-in-water emulsion lotion vehicles of the '824 publication, particularly Formulation 4A in Table 4, with a reasonable expectation of success for the reasons described previously. *Supra* §IV.E.1.b.

Accordingly, in view of the prior art and the knowledge of a person of skill, a person of ordinary skill would have found it obvious to formulate a topical composition comprising

tazarotene at about 0.045% in an oil-in-water emulsion lotion comprising a polymeric emulsifier at a concentration of 0.3-0.5 percent by weight of the composition with a reasonable expectation of success.

Accordingly, in view of the teachings of the prior art and the knowledge of one of skill in the art, a person of ordinary skill would have been motivated to treat acne vulgaris through once-daily topical application of a pharmaceutical composition comprising about 0.045% tazarotene as the sole active ingredient in an oil-in-water emulsion lotion comprising an oil phase and an aqueous phase, wherein the oil phase comprises a dicarboxylic acid ester and a mineral oil at a total concentration of 10-12 percent and the aqueous phase comprises water, 0.5-0.7 % carbomer homopolymer and 0.3-0.5% of a polymeric emulsifier prior to May 12, 2017 with a reasonable expectation of success.

Therefore, claim 1 of the '482 patent would have been obvious to a skilled artisan prior to May 12, 2017, in view of the knowledge of a skilled artisan, over the following exemplary combinations of prior art references:

1) WO '001 in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita).

Persons of ordinary skill in the art would have been motivated to combine WO '001 and Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) and would have had a reasonable expectation of success in doing so for the reasons explained above (*see, e.g.*, §IV.B) and because these references relate to the treatment of skin disorders through topical application of tazarotene. For example, tazarotene was a well-known drug for treating acne prior to May 2017, but was also known to exhibit skin irritation. *See Supra* IV.B. The prior art taught that using a lower concentration of tazarotene (0.05%) was one way to reduce such irritation. *Id*. Another way to reduce irritation was to include tazarotene in a formulation that would help minimize irritation and/or increase penetration of tazarotene into the skin. *Id*. WO '001 provided a lotion vehicle for formulating a lower concentration tazarotene composition. *Id*. While WO '001 focuses on the treatment of psoriasis, persons of ordinary skill in the art would have known that tazarotene was the only topical retinoid that was approved and used to treat both psoriasis and acne. Thus, persons of ordinary skill in the art interested in treating acne with tazarotene would have looked to references treating either psoriasis or acne for relevant guidance. Persons of ordinary skill in the art would have also known that both acne and psoriasis patients treated with topical tazarotene experienced local skin irritation. Therefore, persons of ordinary skill in the art would have been motivated to apply any known solutions for reducing irritation for one disease to treatment of the other disease as well. Moreover, Anderson, Kircik, Chim and Shalita taught the use of 0.05% tazarotene formulations for the effective treatment of acne. Thus one of skill in the art would have had a reasonable expectation of success in the use of 0.05% tazarotene to treat acne, especially when combined with the teachings of the WO '001 vehicle formulation. Accordingly, persons of ordinary skill in the art would have been highly motivated to combine the teachings of WO '001 with the teachings of Anderson, Kircik, Chim and Shalita. The resulting combination of the formulation described in WO '001 for use in once daily treatment of acne described by Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) would have rendered Claims 1-11 obvious, as described above. *See* IV.B, §IV.D.1 and §IV.E.1.

2) The '824 publication in combination with the Tazorac® Label, alone or in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita).

Persons of ordinary skill in the art would have been motivated to combine the '824 publication and the Tazorac® Label, alone or in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) and would have had a reasonable expectation of success in doing so for the reasons explained above (*see, e.g.*, §IV.B) and because these references relate to the treatment of skin disorders through topical application of active ingredients, including tazarotene. For example, tazarotene was a well-known drug for treating acne prior to May 2017, but was also known to exhibit skin irritation. *See Supra* IV.B. The prior art taught that using a lower concentration of tazarotene (0.05%) was one way to reduce such irritation. *Id*. Another way to reduce irritation was to include tazarotene in a formulation that would help minimize irritation and/or increase penetration of tazarotene into the skin. *Id*. Given the knowledge that tazarotene was approved for both psoriasis and acne, persons of ordinary skill in the art interested in treating acne with tazarotene would have looked to references treating either psoriasis or acne for relevant guidance. Persons of ordinary skill in the art would have also known that both acne and psoriasis patients treated with topical tazarotene experienced local skin irritation. Therefore, persons of ordinary skill in the art would have been motivated to apply any known solutions for reducing irritation for one disease to treatment of the other disease as well. Thus, those of skill in the art would have looked to the teachings of the '824 publication. *See* §IV.E.1. The '824 publication provided a lotion vehicle that improved the penetration of tazarotene into the patient's skin, improved the efficacy of the formulation and allowed for a lower concentration of drug to be used, which would reduce adverse events such as skin irritation. *Id*.; *see also* §IV.E.1. The Tazorac® Label also taught that irritation caused by tazarotene was dose dependent. *See* §IV.E.1. Moreover, Anderson, Kircik, Chim and Shalita taught the use of 0.05% tazarotene formulations for the effective treatment of acne. *Supra* §§IV.B.1, IV.E.1.b. Thus one of skill in the art would have had a reasonable expectation of success in the use of 0.05% tazarotene to treat acne, especially when combined with the teachings of the '824 publication's vehicle formulation. Accordingly, persons of ordinary skill in the art would have been highly motivated to combine the teachings of '824 publication and the Tazorac® Label, alone or in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita). The resulting combination of the formulation described in the '824 publication with the knowledge of the Tazorac® label alone or in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) for treatment of acne would have rendered Claims 1-11 obvious, as described above. *See* §IV.B and §IV.E.

3) The '824 publication in combination with the IDP-118 Study and Anderson, Kircik, Chim or Shalita (or Anderson and Shalita).

Persons of ordinary skill in the art would have been motivated to combine the '824 publication and the IDP-118 study in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) and would have had a reasonable expectation of success in doing so for the reasons explained above (*see, e.g.*, §IV.B) and because these references relate to the treatment of skin disorders through topical application of active ingredients, including tazarotene. For example, tazarotene was a well-known drug for treating acne prior to May 2017, but was also known to exhibit skin irritation. *See Supra* IV.B. The prior art taught that using a lower concentration of tazarotene (0.05%) was one way to reduce such irritation. *Id*. Another way to reduce irritation

was to include tazarotene in a formulation that would help minimize irritation and/or increase penetration of tazarotene into the skin. *Id*. Given the knowledge that tazarotene was approved for both psoriasis and acne, persons of ordinary skill in the art interested in treating acne with tazarotene would have looked to references treating either psoriasis or acne for relevant guidance. *Supra* §IV.B.3.a. Persons of ordinary skill in the art would have also known that both acne and psoriasis patients treated with topical tazarotene experienced local skin irritation. Therefore, persons of ordinary skill in the art would have been motivated to apply any known solutions for reducing irritation for one disease to treatment of the other disease as well. Thus, those of skill in the art would have looked to the teachings of the '824 publication. *See* §IV.E.1. The '824 publication provided a lotion vehicle that improved the penetration of tazarotene into the patient's skin, improved the efficacy of the formulation and allowed for a lower concentration of drug to be used, which would reduce adverse events such as skin irritation. *Id*.; *see also* §IV.E.1. Those of skill in the art also would have looked to IDP-118 Study, which used a 0.045% tazarotene lotion to treat psoriasis, and a skilled artisan would have looked to investigate the treatment of acne with the same or similar lotion and would have been motivated to determine an appropriate vehicle for such a lotion. That investigation would have driven the skilled artisan directly to the '824 publication. *See* §IV.B.3.c. Moreover, as described above, Anderson, Kircik, Chim and Shalita taught the use of 0.05% tazarotene formulations for the effective treatment of acne. *Supra* §§IV.B.1, IV.E.1.b. Thus one of skill in the art would have had a reasonable expectation of success in the use of 0.05% tazarotene to treat acne, especially when combined with the teachings of the '824 publication's vehicle formulation. Accordingly, persons of ordinary skill in the art would have been highly motivated to combine the teachings of '824 publication and the IDP-118 study in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita). The resulting combination of the formulation described in the '824 publication with the knowledge of the IDP-118 study in combination with Anderson, Kircik, Chim or Shalita (or Anderson and Shalita) for treatment of acne would have rendered Claims 1-11 obvious, as described above. *See* §IV.B and §IV.E.

One of skill in the art would have also understood that additional references, such as those described in §§IV.B, IV.C, IV.D and IV.E[5] would have similarly rendered obvious Claims 1-11 when combined with WO '001 or the '824 publication, provided a motivation to modify the prior art with a reasonable expectation of success and/or described the state of the art prior to May, 2017. For example, the off-label use of 0.05% tazarotene described in the IQVIA data and Bausch's internal documents demonstrates the widespread use of topical compositions comprising 0.05% tazarotene for treating acne prior to May 12, 2017. *See* §IV.B.1. Such use would have been within the general knowledge of one of skill in the art.

[5] *See, e.g*., the '847 patent, the '716 patent, the '821 publication, Dosik, Patel, Eastman, Fabior® Label, Kober, Ismail, Krueger, Tanghetti, Tegeli, Shivanand, Kircik 2011, Guenther, Gregoriou, the '670 publication, Zaenglein, or Zeichner.

Padagis reserves the right to rely on additional prior art references for background information, including to establish the knowledge of a skilled artisan and a skilled artisan's motivation to modify and/or combine the references identified in above, and to rebut any invalidity arguments and/or secondary considerations arguments raised by Plaintiffs.

2. Claim 2

Claim 2 of the '482 Patent depends from claim 1, and further recites that dicarboxylic acid ester in the oil phase is diethyl sebacate. Diethyl sebacate was a well-known solvent and emollient used in the art to formulate both retinoid and non-retinoid compositions. *See, e.g.* '295 patent at 1:40-44 (disclosing corticosteroid formulations containing a sebacate carrier, such as dialkyl sebacates, wherein alkyl contain 1 to 10 carbons); *see also* Nikkol at 23 (disclosing diethyl sebacate as a fatty acid ester for use in pharmaceutical formulations).

WO '001 disclosed an oil-in-water emulsion lotion comprising 0.045% tazarotene and an oil phase that comprises diethyl sebacate as explained previously. *Supra* §IV.D.2.

The '824 publication disclosed a vehicle comprising an oil-in-water emulsion lotion comprising an oil phase that comprises diethyl sebacate. Formulation 4A of the '824 publication disclosed an oil-in-water emulsion that includes an oil phase comprising diethyl sebacate at 2.97% and light mineral oil at 8.03% by weight of the composition. '824 publication at Table 4. A person of ordinary skill would have been motivated to formulate 0.045% tazarotene in the oil-in-water emulsion lotion vehicles of the '824 publication, particularly Formulation 4A in Table 4, with a reasonable expectation of success for the reasons described previously. *Supra* §IV.E.1.b.

The '716 patent disclosed that tazarotene can be dissolved in diisopropyl adipate at ambient temperature. '716 patent at 17:18-18:21. The '716 patent also disclosed that the mixture of tazarotene and diisopropyl adipate can be mixed at ambient temperature with mineral oil and BHT until homogenous. '716 patent at 17:58-61. The '824 publication disclosed that other dicarboxylic acid esters, such as diethyl sebacate, can be substituted in place of diisopropyl adipate. *Id*. at [0019]-[0020], [0036].

The '847 patent disclosed an oil-in-water emulsion (lotion) containing a retinoid. *See* '847 patent at 5:61-6:63. The oil phase is made of components commonly used in the art, including mineral oil, isopropyl myristate, and diisopropyl adipate. *See* '847 patent at 6:5-11. As described above, the use of diethyl sebacate was well known, and one of skill in the art would have known that diethyl sebacate could be used in the formulations disclosed in the '847 patent. *See also* '824 publication at [0019]-[00200], [0036]. Given the known interchangeability of diisopropyl adipate and diethyl sebacate, one of ordinary skill in the art would have been motivated to use diethyl sebacate in place of diisopropyl adipate in prior art formulations containing tazarotene.

The '173 publication disclosed chemically-stable formulations foam formulations for delivery of active pharmaceutical agents, including retinoids. '173 publication at Abstract. The '173 publication disclosed that the formulations may include an emollient or humectant, and it disclosed diethyl sebacate as one such emollient. *See id.* at [0058]-[0060], claim 7. The '173

patent disclosed the use of diethyl sebacate in a formulation with a retinoid. *See id.* at [0058]-[0060], [0079], claim 7. Given these teachings, a skilled artisan would have been motivated to use diethyl sebacate in an oil phase for an oil-in-water emulsion comprising tazarotene as the sole active ingredient with a reasonable expectation of success.

The '821 publication disclosed compositions and methods of treating skin disorders, including acne, containing an imidazoquinoline compound and a retinoid agent, including tazarotene at concentrations between about 0.1% w/w and about 0.001% w/w. *See* '821 publication at [0024], [0083], claims 6, 38-48, 62-64. The '821 publication disclosed that the composition may be formulated for topical administration in the form of drops, tinctures, lotions, creams, gels, solutions, ointments, and lacquers. *Id.* at [0090]. The '821 publication disclosed that the imidazoquinoline compound and the retinoid may provided in a formulation that includes a solvent, wherein the solvent includes diethyl sebacate. *Id.* at [0028], claim 64. The '821 publication provides an example of a formulation including tazarotene that includes a 50:50 mixture of isostearic acid and diethyl sebacate as the solvents. *Id.* at [0111]-[0119]. The '821 publication disclosed testing of the stability of tazarotene in the formulation containing diethyl sebacate as a solvent and teaches that tazarotene was chemically stable in the formulation. *Id.*

Accordingly, in view of the prior art and the knowledge of a person of skill, a person of ordinary skill would have found it obvious to formulate a topical composition comprising tazarotene at about 0.045% in an oil-in-water emulsion lotion comprising diethyl sebacate as the dicarboxylic acid ester for use in a method of treating acne as described above with respect to Claim 1 with a reasonable expectation of success. Therefore, claim 2 of the '482 patent would have been obvious to a skilled artisan prior to May 12, 2017, in view of the knowledge of a skilled artisan, over at least the exemplary prior art combinations provided for claim 1.

Padagis reserves the right to rely on additional prior art references for background information, including to establish the knowledge of a skilled artisan and a skilled artisan's motivation to modify and/or combine the references identified in above, and to rebut any invalidity arguments and/or secondary considerations arguments raised by Plaintiffs.

3. <u>Claim 3</u>

Claim 3 of the '482 Patent depends from claim 1, and further recites that the oil phase comprises diethyl sebacate and light mineral oil. WO '001 disclosed an oil-in-water emulsion lotion comprising 0.045% tazarotene and an oil phase that comprises a diethyl sebacate and light mineral oil mineral oil as explained previously. *Supra* §IV.D.3.

The '824 publication disclosed a vehicle comprising an oil-in-water emulsion lotion comprising an oil phase that comprises diethyl sebacate and light mineral oils. Formulation 4A of the '824 publication disclosed an oil-in-water emulsion that includes an oil phase comprising diethyl sebacate at 2.97% and light mineral oil at 8.03% by weight of the composition. '824 publication at Table 4. A person of ordinary skill would have been motivated to formulate 0.045% tazarotene in the oil-in-water emulsion lotion vehicles of the '824 publication, particularly Formulation 4A in Table 4, with a reasonable expectation of success for the reasons described previously. *Supra* §IV.E.1.b.

> tazarotene or a pharmaceutically acceptable tazarotenic acid salt present in the composition at a concentration in the range from about 0.01 to 0.049 percent by weight of the composition; and
>
> a dermatologically acceptable oil-in-water emulsion vehicle; wherein said composition is a lotion.

'561 Application at claim 1.

The single most reasonable inference to be drawn from this evidence is that Dr. Radhakrishnan Pillai failed to disclose material information with an intent to deceive the PTO. Claims 1-11 are therefore unenforceable due to Dr. Pillai's inequitable conduct.

V. CLAIM CHART

Pursuant to L. Pat. R. 3.6(c) and the Pretrial Scheduling Order (D.I. 37), and subject to the reservation of rights outlined above, Padagis provided a claim chart Appendix 1 attached to its Invalidity Contentions served on December 22, 2022 and attached as Appendix 1 below. This claim chart provides, in conjunction with Padagis's Invalidity Contentions served on December 22, 2022 and these Revised Invalidity Contentions and the documents incorporated by reference, the written basis for Padagis's Invalidity Contentions pursuant to L. Pat. R. 3.6(c). The information in the charts is representative of the references and disclosure herein and are not intended as exhaustive. Persons of ordinary skill in the art at the time of filing the applications for the Patent-in-Suit knew to read references as a whole, and in the context of other publications, literature and the general knowledge in the field. Padagis may rely on all such information as well as other portions of the prior art references cited in these Invalidity Contentions, other references and documents, and expert testimony, to establish that a limitation is inherent; to establish enablement of a prior art reference; to provide context and as aids to understanding and interpreting the listed references; and/or to establish that it would have been obvious for a person of ordinary skill in the art to modify or combine any of the cited references.

VI. DOCUMENT PRODUCTION

Pursuant to L. Pat. R. 3.6(d), the Pretrial Scheduling Order (D.I. 37), and the Court's April 24, 2023 Order (D.I. 63), Padagis produced copies of the prior art identified herein on December 22, 2022, April 21, 223, and June 6, 2023. Padagis reserves the right to identify and produce additional documents.

Dated: June 6, 2023 /s/ *Karen A. Confoy*

Karen A. Confoy

Cali R. Spota
FOX ROTHSCHILD LLP
Princeton Pike Corporate Center
997 Lenox Drive
Lawrenceville, NJ 08648
Tel: (609) 896-3600
Fax: (609) 896-1469
kconfoy@foxrothschild.com
cspota@foxrothschild.com

Attorneys for Padagis Israel Pharmaceuticals Ltd, Padagis US LLC, and Padagis LLC

Of Counsel:

Bill Zimmerman (*Pro Hac Vice* pending)
Andrea Cheek (*Pro Hac Vice* pending)
KNOBBE, MARTENS, OLSON & BEAR, LLP
1717 Pennsylvania Ave. N.W. Ste. 900
Washington D.C. 20006
(202) 640-6400 Telephone
(202) 640-6401 Facsimile
bill.zimmerman@knobbe.com
andrea.cheek@knobbe.com

Carol Pitzel Cruz (*Pro Hac Vice* pending)
KNOBBE, MARTENS, OLSON & BEAR, LLP
925 Fourth Avenue, Suite 2500
Seattle, WA 98104
(206) 405-2000 Telephone
(206) 405-2001 Facsimile
carol.pitzel.cruz@knobbe.com

Brian C. Barnes (*Pro Hac Vice* pending)
KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 Main St., 14th Floor
Irvine, CA 92614
(949) 760-0404 Telephone
(949) 760-9502 Facsimile
brian.barnes@knobbe.com

CERTIFICATE OF SERVICE

I hereby certify that on June 6, 2023, a true and correct copy of the foregoing document was served on the following counsel of record at the addresses and in the manner indicated:

VIA ELECTRONIC MAIL:

William P. Deni, Jr.
Charles H. Chevalier
J. Brugh Lower
GIBBONS P.C.
One Gateway Center
Newark, New Jersey 07102
wdeni@gibbonslaw.com
cchevalier@gibbonslaw.com
jlower@gibbonslaw.com

Thomas P. Steindler
April E. Weisbruch
Christopher Bruno
MCDERMOTT WILL & EMERY LLP
500 North Capitol Street N.W.
Washington, D.C. 20001
tsteindler@mwe.com
aweisbruch@mwe.com
cbruno@mwe.com

Dated: June 6, 2023

Claire A. Stoneman