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**Franklin Pierce Law Center**
**Sixteenth Annual Advanced Licensing Institute**
**Due Diligence Hypothetical**[1]

## I. Introduction.

You have been retained by Elite Healthcare Company to conduct a patent due diligence analysis. Elite is a multinational pharmaceutical company and is traded on the NYSE.

Elite is considering licensing or purchasing the new drug ALERT® (caffeinate), which is used for the treatment of moderate to severe jet lag. ALERT® is owned and marketed by Vision Pharmaceuticals, Inc., which is a mid-size pharmaceutical company traded on the NASDAQ.

Elite wants your opinion as to whether there are any freedom-to-operate, patentability, regulatory, or other issues that may affect its decision to purchase or license ALERT®.

The following sections summarize information that is either made available to you by Elite or Vision or which you find through your own investigations. Relevant citations and publications which relate to issues posed in the hypothetical are attached in the Appendix.

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 The parties named in this hypothetical and the scenarios depicted herein do not relate to actual individuals or events. This presentation does not constitute legal advice and should not be construed as such.

## II. Background Information.

### 1. Regulatory and Market Background.

#### (a) Regulatory Background.

ALERT® is a once-a-day tablet comprised of a matrix of caffeinate and a controlled-release polymer known as "GPA". The approved label indication for ALERT® reads as follows:

> "ALERT® (caffeinate)(10 milligram tablet) is approved for the treatment of moderate to severe travel-related fatigue in persons eighteen years of age or older. ALERT® should be taken with food. "

ALERT® does not qualify for any non-patent market exclusivity (e.g., the drug does not benefit from any new chemical entity or clinical trial-related exclusivity under Hatch-Waxman).

#### (b) Market Background.

Worldwide 2006 sales for ALERT® were $250 million; ALERT® has captured about 75% of the United States anti-jet lag prescription drug market. ALERT® is the only once-a-day anti-jet lag drug approved for sale in the United States. Elite believes that with its superior marketing organization, it can expand worldwide sales of ALERT® to $750 million annually within five years.

Elite's marketing director has proof that there is a substantial off-label use of ALERT® by anesthesiologists to revive patients after surgery.

The Washington, D.C. citizen litigation group STOPP ("Stop Taking Over-Priced Pills") has named ALERT® as the most over-priced drug in the United States. Direct and indirect purchasers have complained to Vision about the fact that the wholesale price of ALERT® has increased by 25% over the past two years.

Elite's financial analysts have concluded that Elite would need to maintain market exclusivity for ALERT® until November 1, 2011 in order to justify a license or purchase under the terms proposed by Vision.

### 2. Patent Background.

Two unexpired U.S. patents - the '123 and '456 Patents - are listed in the Orange Book as covering ALERT®. Counterparts of the '123 Patent have issued in

commercially significant foreign jurisdictions; there are no issued foreign counterparts of the '456 Patent.

**(a) ‘123 Patent.**

Vision’s ‘123 Patent claims a once-a-day controlled release tablet which is comprised of caffeinate and an "erodible polymer" and which has a $T_{max}$ of about 18 hours (i.e., the claimed tablet achieves maximum blood plasma levels of caffeinate eighteen hours after ingestion). The ‘123 Patent expires on December 1, 2013.

The ‘123 Patent specification discloses that "controlled-release polymers which can be used in tablets of the invention include long-chain erodible polymers which function throughout the digestive tract." GPA is one of several "long-chain erodible polymers" exemplified in the '123 Patent.

The '123 Patent names two current Vision employees as joint inventors.

**(b) ‘456 Patent.**

The ‘456 Patent claims a method of treating "post-sedation grogginess" by administering to a patient in need thereof controlled-release dosage forms comprising caffeinate and a wide variety of polymers, including GPA. The ‘456 Patent expires on November 1, 2015.

The FDA assigned an Orange Book use code “999” to the ‘456 patent; use code “999” reads “treating undesirable fatigue in an adult”.

The ‘456 Patent only exemplifies the alleviation of grogginess after anesthesia. However, “post-sedation grogginess” in the ‘456 Patent specification is defined as “any decrease in alertness caused, e.g., by the administration of a drug or non-drug therapy such as hypnosis.”

The '456 Patent names a former Vision employee and a Kansas Medical College faculty member as joint inventors.

**3. Blue Ridge’s Paragraph (IV) Certification.**

Blue Ridge Ltd. is a generic manufacturer which is traded on the NASDAQ. Blue Ridge has filed an ANDA with the FDA which seeks authorization to market a generic version of ALERT®.

Last week, Vision’s CEO received a Hatch-Waxman Paragraph (IV) certification from Blue Ridge in connection with the ANDA. The certification summarizes

Blue Ridge's noninfringement and unenforceability contentions with respect to the '123 and '456 Patents. Blue Ridge's Paragraph (IV) certification is the first such certification submitted for ALERT®.

The bases of Blue Ridge's Paragraph (IV) certification are as follows.

**(a) Noninfringement: '123 Patent.**

Blue Ridge's generic uses an EON polymer, which acts *in vivo* as either an acidic or a basic polymer, depending upon variations in digestive tract pH. EON was invented one year after the '123 patent was filed. Blue Ridge asserts that its generic does not infringe the '123 Patent, either literally or under the doctrine of equivalents, for the following reasons.

Per Blue Ridge, the term "erodible polymer" in the claims of the '123 Patent, when properly construed, excludes polymers such as EON. To support its claim construction, Blue Ridge relies on the authoritative treatise *Jeeves on Biopolymers*, which states that "erodible biopolymers typically behave as acidic polymers throughout the digestive tract." According to Blue Ridge, its generic does not literally infringe the claims of the '123 Patent as EON does not behave as an acidic polymer throughout the digestive tract and therefore does not satisfy the "erodible polymer" limitation of the '123 Patent's claims.

Blue Ridge also notes that during prosecution of the '123 Patent, Vision substituted "erodible polymer" for the original claim term "long-chain erodible polymer" in response to an indefiniteness rejection. EON is a long-chain polymer. Blue Ridge contends that when Vision amended its claims to specify the use of erodible polymers, it relinquished coverage to tablets that used long chain polymers like EON which behave *in vivo* as either an acidic or a basic polymer. Thus, per Blue Ridge, its generic does not infringe under the doctrine of equivalents.

Elite scientists doubt that a bioequivalent version of ALERT® could be made using only an EON polymer as Blue Ridge claims. They suspect that Blue Ridge has somehow blended an EON polymer in such a way that it behaves like a GPA polymer. However, they caution that EON has been known to behave unpredictably *in vitro* and

*in vivo*. Even if Blue Ridge provided a sample of its generic, the exact composition and function of Blue Ridge's polymer could not be determined experimentally within forty-five days of Vision's receipt of Blue Ridge's paragraph (IV) certification.[2]

**(b) Inequitable Conduct.**

Since its original filing date, the specification of the '123 Patent contained the following sentence: "We have discovered that compositions of the claimed invention achieve maximum plasma levels of active ingredient more than 12 hours (e.g., 16-18 hours) after ingestion." While the '123 Patent specification did not contain $T_{max}$ data, it did reference an authoritative prior art article which showed that the $T_{max}$ of other stimulants could be well in excess of twelve hours under appropriate conditions.

In its certification, Blue Ridge noted the following.

According to an article by the '123 Patent inventors in *Stimulant Research*, Vision did not determine any $T_{max}$ values for ALERT® until several months after the effective filing date of the '123 Patent and did not establish $T_{max}$ values of greater than 12 hours until after the '123 Patent issued. In the '123 Patent notice of allowance, the PTO Examiner wrote that "greater than 12 hour $T_{max}$ values distinguish the claims from the prior art".

Per Blue Ridge: (1) Vision misrepresented to the PTO that it actually had data to support its $T_{max}$ claim limitation as of the effective filing date of the '123 Patent; and (2) the PTO Examiner relied upon this alleged misrepresentation in his decision to allow the '123 Patent.

**(c) Noninfringement: '456 Patent.**

Blue Ridge maintains that use of its generic under the ANDA will not infringe the '456 Patent because that patent claims an off-label use (treatment of post-sedation grogginess as opposed to travel-related fatigue). Blue Ridge asserted in its Paragraph (IV) certification that the '456 Patent should not be listed in the Orange Book as a patent which covers ALERT®.

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[2] If Vision sues Blue Ridge for patent infringement within this forty-five day window, any approval of Blue Ridge's ANDA cannot be made effective until either thirty months from Vision's receipt of Blue Ridge's paragraph (IV) certification or the date of a district court decision finding Vision's patents to be invalid, unenforceable, or not infringed. *See* 21 U.S.C.§ 355(j)(4)(B)(iii).

**4. Serene Pharma Patent.**

Serene Pharma Inc. owns the U.S. '789 Patent and related foreign counterparts of that patent. ALERT® was marketed more than one year before the effective filing date of the '789 Patent. The '789 Patent expires on June 1, 2019.

Claim 1 of the '789 Patent reads as follows:

> 1. A method of modulating fatigue in a sleep-deprived mammal comprising administering a somnambulant receptor antagonist to the mammal.

In 2005, scientists from the Nautilus Institute discovered that caffeinate is a somnambulant receptor antagonist.

**5. Additional Facts.**

In 2004, Vision established a $100 million revolving line of credit with Adams Bank of New York.

Blue Ridge's chairman has indicated that unless Blue Ridge is able to market a generic version of a major branded product within four years, or otherwise obtains at least $50 million during that time period, it may have to abandon its plans to launch its only innovative product (a drug which is useful in treating travel-related nausea), and may even discontinue operations.

Blue Ridge owns the acclaimed FAST COAT® pill-coating technology and related patent portfolio. FAST COAT® coats the surface of tablets and pills and enables such dosage forms to withstand the acidic environment of the stomach. Blue Ridge has been unable to use FAST COAT® with any of its products. Blue Ridge has not licensed or assigned its FAST COAT® patents. Elite's business development director believes that Blue Ridge's FAST COAT® technology would be of significant value to Elite.

Elite's in-house counsel predicts that a patent litigation with Blue Ridge will cost $4-6 million.

ALERT® NDA data provided by Vision indicates that while the ALERT® $T_{max}$ was generally 16-18 hours in fed patients, it averaged only 12 hours in fasting patients. Before the '123 Patent issued, the FDA required Vision to amend its proposed ALERT® label to recommend that ALERT® be taken with food.

The NDA also showed that a clinical trial was held in a United States hospital more than one year before the effective filing date of the '123 patent. The purpose of the

trial was to establish that a long-chain erodible polymer could actually slow the release of caffeinate *in vivo*.

Neither the food effect nor the clinical trial information were brought to the PTO's attention during prosecution of the '123 Patent.

**III. <u>The Proposed Settlement</u>.**

As part of your analysis, Elite would like you to opine on whether, if Elite were to acquire exclusive rights to ALERT®, Elite and Blue Ridge could resolve Blue Ridge's patent challenge through an agreement based on the following terms:

- Elite will grant Blue Ridge an exclusive license effective December 1, 2012 under the '123 and '456 Patents to market a generic version of ALERT® and Blue Ridge will agree not to market a generic version of ALERT® prior to that date;
- Blue Ridge will grant Elite an exclusive license effective February 1, 2008 under its FAST COAT® technology;
- Elite will: (a) co-market any approved version of the Blue Ridge anti-nausea drug (b) assist Blue Ridge in obtaining regulatory approval for that drug, and (c) pay for 50% of the anti-nausea drug development costs going forward (which could total $60 million);
- Elite will pay Blue Ridge: $3 million on February 1, 2008, $3 million on February 1, 2009, and 5% of any profits earned on any Elite product that uses FAST COAT®; and
- Blue Ridge will pay Elite 40% of profits on sales of the anti-nausea drug.

Elite's CEO views this proposal as a "win-win" for both parties. Elite's clinical and sales expertise will greatly increase the chances that Blue Ridge's anti-nausea drug will be a highly successful drug product, particularly if it is co-marketed with ALERT®.

## Appendix: Hypothetical Issues and Relevant Citations

### I. '123 Patent and '456 Patents.

#### 1. '123 Patent.

Whether the Blue Ridge generic literally infringes the claims of the '123 Patent? *See Merck & Co. Inc. v. Teva Pharmaceuticals USA, Inc.*, 395 F.3d 1364, *reh'g en banc denied*, 2005 U.S. App. LEXIS 6814 (Fed. Cir. 2005); *AstraZeneca AB, et al. v. Mutual Pharmaceutical Co.*, 384 F.3d 1333 (Fed. Cir. 2004). *See also Phillips v. AWH Corporation*, 415 F.3d 1403 (Fed. Cir. 2005).

Whether the Blue Ridge generic infringes the claims of the '123 Patent under the doctrine of equivalents? *See Glaxo Wellcome, Inc. v. Impax Laboratories, Inc.* 356 F.3d 1348 (Fed. Cir), *rehearing en banc denied*, 2004 U.S. App. LEXIS 8429 (Fed. Cir. 2004); *Novartis Pharmaceuticals Corp., et al. v. Abbott Laboratories*, 375 F.3d 1328 (Fed. Cir. 2004); *Insituform Technologies, Inc., et al. v. Cat Contracting, Inc., et al.*, 385 F.3d 1360; 72 U.S.P.Q.2D (BNA) 1870 (2004).

Whether Vision's representations to the PTO about $T_{max}$ constituted inequitable conduct? *See Purdue Pharma L.P., et al. v. Endo Laboratories Inc., et al.*, 438 F.3d 1123 (Fed. Cir. 2006).

Whether the clinical trial invalidates the claims of the '123 Patent? *See SmithKline Beecham Corp., et al. v. Apotex Corp., et al.*, 365 F.3d 1306; 70 U.S.P.Q.2D (BNA) 1737 (2004), *vacated*, 403 F.3d 1331; 74 U.S.P.Q.2D (BNA) 1396 (Fed. Cir. 2005).

Whether Vision's failure to inform the PTO of either the pre-filing date clinical trial or ALERT® food effect data submitted to the FDA constituted inequitable conduct that renders the '123 Patent unenforceable? *See Purdue, supra*.

#### 2. '456 Patent.

Whether the '456 Patent can be properly asserted against a generic version of ALERT®? *See Allergan, Inc., et al. v. Alcon Laboratories, Inc., et al.*, 324 F.3d 1322 (Fed. Cir.), *cert denied*, 540 U.S. 1048 (2003); *Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348 (Fed. Cir. 2003); *Purepac Pharmaceutical Co. v. Thompson*, 238 F. Supp.2d

191 (D.C. Cir. 2002). *See also 68 Fed. Reg. 36676-712 (June 2003)* (summarizing Orange Book listing standards); and "III. Patent Antitrust Issues", *infra*.

**II. Serene '789 Patent.**

Whether the Serene '789 Patent is anticipated by the pre-effective filing date use of ALERT®? *See See SmithKline,* 403 F.3d 1331 (Fed. Cir. 2005).

**III. Patent Antitrust Issues.**

Whether the '456 Patent should be listed in the Orange Book as a patent which covers ALERT®? *See In re Buspirone Patent Litigation,* 185 F. Supp 2d 363 (S.D.N.Y. 2002); *68 Fed. Reg. 36676-712 (June 2003).*

Whether the settlement proposed by Elite violates the antitrust laws? *See Schering-Plough Corp v. F.T.C.,* 402 F.3d 1056; 74 U.S.P.Q.2D (BNA) 1001 (11thCir.2005)(http://patentlaw.typepad.com/patent/files/schering_antitrust_from_patentlyo.pdf); *Valley Drug Co. v. Geneva Pharmaceuticals Inc.*, 344 F.3d 1294, *reh'g en banc denied,* 2003 U.S. App. LEXIS 27801 (11th Cir. 2003), *cert denied,* __U.S.__, 125 S. Ct. 308 (2004); *In re Cardizem CD Antitrust Litigation*, 332 F.3d 896 (6th Cir. 2003); "FTC Antitrust Actions in Health Care Services and Products", http://www.ftc.gov/bc/hcupdate0404.pdf .

Whether enforcement of the '123 or '456 Patents would violate the antitrust laws? *See Unitherm Food Systems, Inc., et al. v. Swift-Ekrich, Inc*., 375 F.3d 1341, *reh'g en banc denied,* 2004 U.S. App. LEXIS 20730 (Fed. Cir. 2004), *cert granted,* __U.S. __, 125 S. Ct. 1399 (2005); *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059 (Fed. Cir. 1998).

180 day exclusivity: http://www.ftc.gov/os/2005/04/050407ltrivaxpharm.pdf

**IV. SEC Issues.**

Whether the aforementioned patent and regulatory issues associated with ALERT® give rise to Sarbanes-Oxley reporting obligations. *See* Sarbanes-Oxley Act, Pub. L. 107-204, 116 Stat. 745 (2002).