

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KITE PHARMA, INC.,
Petitioner,

v.

SLOAN KETTERING INSTITUTE FOR CANCER RESEARCH,
Patent Owner.

Case IPR2015-01719
Patent No. 7,446,190

DECLARATION OF PROF. THOMAS BROCKER

Mail Stop: PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

I.	INTRODUCTION	2
II.	RESOURCES CONSULTED	2
III.	BACKGROUND, QUALIFICATIONS, AND COMPENSATION.....	2
IV.	LEGAL STANDARDS	2
V.	LEVEL OF ORDINARY SKILL IN THE ART.....	2
VI.	CLAIM CONSTRUCTION	2
VII.	SCIENTIFIC BACKGROUND	2
	A. Cells of the Immune System	2
	B. Antibodies	2
	C. T Cell Receptors and Co-Receptors.....	2
	D. Structural and Corresponding Functional Characteristics of Antigen-Recognizing Receptors and Antibodies	2
	E. Structural and Corresponding Functional Characteristics of T cell Surface Molecules	2
	F. T Cell Signaling	2
	1. T Cell Receptors	2
	G. The Two-Signal Model of T Cell Activation.....	2
	H. CD28 Structure and Function	2
VIII.	THE '190 PATENT.....	2
IX.	STATE OF THE ART.....	2
	A. CD28 Literature	2
	1. Aruffo.....	2

2.	Peach	2
3.	Kariv	2
4.	Greenfield	2
5.	Stein	2
B.	CD28 Chimeric Constructs	2
1.	Krause	2
2.	The '783 Patent Publication.....	2
C.	Surface Expression of the B7 Ligands.....	2
D.	Chimeric TCRs.....	2
1.	“First Generation” Chimeric TCRs with Signal 1 Only.....	2
2.	“Second Generation” Chimeric TCRs Combining Signal 1 and Signal 2	2
X.	VALIDITY OF THE '190 PATENT	2
A.	Ground 1: Claims 1-3, 6-9, 12 and 13 Are Not Obvious Under the Combination of Aruffo, Finney, and Krause	2
1.	Kite’s Rationale 2: A Person of Ordinary Skill in the Art Would Not Have “Improved” Upon Finney’s Chimeric TCR By Replacing Finney’s CD28 Region With Krause’s CD28 Region.....	2
2.	Kite’s Rationale 1: A Person of Ordinary Skill in the Art Would Not Have Added a CD3ζ Domain to the Costimulatory Construct Referenced in Krause	2
3.	Kite’s Rationale 3: A Person of Ordinary Skill in the Art Would Not Have Used Routine Optimization to Modify the Length of the CD28 Extracellular Region of Finney.....	2

B.	Reasonable Expectation of Success	2
C.	The '190 Patent's Dependent Claims	2
1.	Ground 2: Claims 4 and 10 Are Not Obvious Under the Combination of Aruffo, Finney, Krause, and Gong.....	2
2.	Ground 3: Claims 5 and 11 Are Not Obvious Under the Combination of Aruffo, Finney, Krause, and Bejcek.....	2
XI.	OBJECTIVE INDICIA OF NONOBVIOUSNESS.....	2
A.	Skepticism of Experts	2
B.	Copying by Others	2
C.	Unexpected Success.....	2
D.	Failure of Others	2
XII.	CONCLUSION	2

I. INTRODUCTION

I, Dr. Thomas Brocker, declare as follows:

1. I understand that in response to a Petition submitted by Kite Pharma, Inc. (“Kite”), an *inter partes* review (“IPR”) of claims 1-13 of U.S. Patent No. 7,446,190 (KIT1001, the “’190 Patent”) was instituted by the Patent Trial and Appeal Board (“PTAB”) on February 11, 2016.

2. I have been retained as an independent expert witness on behalf of Patent Owner Sloan Kettering Institute for Cancer Research (“Sloan Kettering”) for this IPR proceeding. I understand that this Declaration is being submitted along with a Patent Owner’s Response to the Petition for IPR of the ’190 Patent. I opine only with respect to certain issues that are discussed in this declaration. By doing so, however, I do not necessarily agree with other positions taken by Kite that I do not address here.

II. RESOURCES CONSULTED

3. I have reviewed the ’190 Patent, its file history, and Kite’s Petition for *Inter Partes* Review filed with the United States Patent and Trademark Office on August 13, 2015 (Paper No. 1). I have also reviewed the Declaration of Hinrich Abken (KIT1008), the transcript of the deposition of Dr. Abken (Ex. 2021), the exhibits listed on pages 5-7 of Dr. Abken’s declaration, including the Aruffo reference, the Finney reference, the Krause reference, the Gong reference and the Bejcek reference, and all references cited

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.