### UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENOME & COMPANY, Petitioner,

v.

THE UNIVERSITY OF CHICAGO, Patent Owner

> PGR2019-00002 Patent 9,855,302 B2

#### DECLARATION OF SRIDHAR MANI, M.D., IN SUPPORT OF PATENT OWNER RESPONSE

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	A.	Level of ordinary skill in the art7				
	В.	Persons skilled in the art recognized that all cancer types are amenable to immune checkpoint inhibitor therapy				
		1.	Persons in the art understood that all cancer cells have antigens that can be recognized by immune cells, requiring all cancers to evade immune system attack to persist			
		2.	Persons in the art understood that checkpoint inhibitors counteract the immune system's inherent suppressor signals, independent of cancer type			
		3.	Because checkpoint inhibitors target the immune system, persons in the art predicted they would treat every cancer type			
	C.	Persons in the art considered checkpoint inhibitor therapy to be successful, notwithstanding not "all" cancer patients responded30				
	D.	Dr. Braun disregards standard clinical practice in asserting selecting a checkpoint inhibitor for a particular cancer patient would have required extensive testing				
	E.	Neither O'Mahony nor Lopez supports Dr. Braun's conclusion that <i>Bifidobacteria</i> had species- and strain-specific immune effects rendering them "unpredictable."				
		1.	O'Mahony does not provide enough data to conclude its two strains, let alone other strains, produce different immune effects			

2.	Dr. Braun does not explain how any of the reported differences for O'Mahony's two strains would have amounted to "diverse activity" of <i>Bifidobacteria</i> on cancer46				
3.	Lopez does not report enough information to conclude there is "diverse activity" across the twelve strains tested				
4.	Dr. Braun does not explain how any differences that were observed in Lopez amount to unpredictability in cancer treatment				
PETITIONER'S OBVIOUSNESS CHALLENGES (GROUNDS 2– 11)					
conc activ	None of Singh, Dong, Reddy or Lee supports Dr. Braun's conclusions that <i>B. longum</i> had been shown to have antitumor activity against human colon cancer or had been shown to be "immunostimulatory" (grounds 2–4)				
1.	Singh's report that dietary <i>B. longum</i> can inhibit AOM- induced tumor formation in rats would not have led a skilled person to believe that <i>B. longum</i> has activity against colon cancer in humans				
2.	Neither Reddy nor Lee supports Dr. Braun's conclusion that certain <i>Bifidobacteria</i> were known to have antitumor activity				
3.	A skilled person would not have concluded that <i>B. longum</i> is immunostimulatory based on Dong's limited data, obtained from flawed experimental methodologies				
<i>Bifia</i> canc	Kohwi would not have shown a skilled person that <i>Bifidobacterium</i> strains have antitumor activity against human cancer and are immunostimulatory, such that they should be combined with a checkpoint inhibitor (grounds 5–8)85				
shov	The combination of Mohania and Prakash would not have shown that <i>B. bifidum</i> has antitumor effect or modulates PD-1 expression on immune cells (grounds 9–11)				
1.	Mohania does not provide sufficient information to conclude that <i>B. bifdum</i> has an antitumor effect or modulates PD-1 expression on immune cells				
	<ul> <li>3.</li> <li>4.</li> <li>ETITION</li> <li>1)</li></ul>				

	2.	Prakash reported no antitumor effect of <i>B. bifidum</i> in the	
		Example 3 mouse study.	114
VI.	CONCLUS	ION	115

I, Sridhar Mani, hereby declare and state as follows:

#### I. PRELIMINARY STATEMENT

1. I have been retained as an expert on behalf of Patent Owner, The University of Chicago, and I am being compensated at my usual and customary hourly rate for my expert services in connection with this post grant review proceeding. My compensation is not dependent upon the outcome of the proceeding.

2. I have reviewed the Petition for post grant review of Patent No. 9,855,302 ("the '302 patent") filed by Petitioner, Genome & Company, and Dr. Braun's Declaration (Ex. 1002), as well as the exhibits cited in those two documents. I have also reviewed the articles and documents I cite in this declaration.

3. I am aware of information generally available to, and relied upon by, persons of ordinary skill in the art at the relevant time. Some statements I make below are expressly based on such awareness. My statements are also informed by my twenty-two years of practicing clinical oncology, and in particular immunology and clinical drug discovery and development, as well as my fifteen years of treating cancer patients as a board-certified oncologist.

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