UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GENEOSCOPY, INC., Petitioner,

v.

EXACT SCIENCES CORPORATION, Patent Owner.

> Case No.: IPR2024-00459 U.S. Patent 11,634,781

DECLARATION OF DUNCAN WHITNEY, Ph.D.

DECLARATION OF DUNCAN WHITNEY

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VIII.	II. OVERVIEW OF GROUNDS OF UNPATENTABILITY				
IX.	K. THE CLAIMS OF THE '781 PATENT ARE OBVIOUS				
	A.		nard in view of Itzkowitz and Vilkin renders claims 1-9, 11, 14-20 obvious		
		1.	A POSA would be motivated to use the iFOBT of Vilkin in place of the gFOBT of Lenhard		
		2.	A POSA would have been motivated to use the sample collection methodology of Itzkowitz in Lenhard's process		
		3.	A POSA would have been motivated to use the DNA stabilizing buffer of Itzkowitz in Lenhard's process 100		
		4.	Claim 1 104		

5.	Claim 2: "The method of claim 1, further comprising delivering the sealable container containing the removed portion of the fecal sample and said buffer and the sealable collection vessel containing the remaining portion of the fecal sample and said stabilizing buffer to a medical diagnostics laboratory"
6.	Claim 3116
7.	Claim 4: "The method of claim 3, wherein testing the nucleic acid comprises determining expression from a human gene."
8.	Claim 5: "The method of claim 4, wherein determining expression from the human gene comprises testing the nucleic acid for the presence of human DNA having an epigenetic modification."
9.	Claim 6: "The method of claim 5, wherein testing the nucleic acid for the presence of human DNA having an epigenetic modification comprises measuring an amount of a methylated human DNA."
10.	Claim 7: "The method of claim 5, wherein the epigenetic modification comprises aberrant methylation."
11.	Claim 8: "The method of claim 7, wherein the aberrant methylation comprises hypermethylation"
12.	Claim 9: "The method of claim 7, wherein the human DNA having an epigenetic modification comprises a gene and/or a promoter region of a gene."
13.	Claim 11: "The method of claim 5, wherein testing the nucleic acid for presence of human DNA having an epigenetic modification comprises modifying the nucleic acid with bisulfate ions under conditions wherein unmethylated cytosine is converted to uracil
14.	Claim 14: "The method of claim 3, wherein testing for an amount of blood protein in the removed portion comprises testing for a concentration of hemoglobin in the removed portion."

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	15.	Claim 15: "The method of claim 14, wherein the testing for the concentration of hemoglobin comprises immunochemical detection of hemoglobin."		
	16.	Claims 16-20: "The method of claim 14, wherein the removed portion of the fecal sample is considered positive for the presence of blood when the concentration of hemoglobin detected in the removed portion is at least [5, 10, 20, 50, or 200] ng/ml."		
В.	Lenhard in view of Itzkowitz and Vilkin, in further view of Kanaoka renders obvious claims 12 and 13			
	1.	Claim 12: "The method of claim 4, wherein determining expression from the human gene comprises measuring an amount of RNA expressed from the gene."		
	2.	Claim 13: "The method of claim 12, wherein measuring an amount of RNA expressed from the gene comprises reverse transcriptase polymerase chain reaction (RT-PCR) 135		
C.		ard in view of Itzkowitz and Vilkin, in further view of Derks ers obvious claim 10		
D. Shuber and Vilk		er and Vilkin render obvious claims 1-9, 11, and 14-20 137		
	1.	Claim 1		
	2.	Claim 2: "The method of claim 1, further comprising delivering the sealable container containing the removed portion of the fecal sample and said buffer and the sealable collection vessel containing the remaining portion of the fecal sample and said stablizing buffer to a medical diagnostics laboratory"		
	3.	Claim 3152		
	4.	Claim 4: "The method of claim 3, wherein testing the nucleic acid comprises determining expression from a human gene."		
	5.	Claim 5: "The method of claim 4, wherein determining expression from the human gene comprises testing the		

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