

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte VLADIMIR I. BARANOV,  
LJUBOV A. RYABOVA,  
OLEG B. YARCHUK and  
ALEXANDR S. SPIRIN

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Appeal No. 1997-0878  
Application 07/834,523

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ON BRIEF

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Before WILLIAM F. SMITH, ROBINSON and SPIEGEL, Administrative Patent Judges.

WILLIAM F. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision under 35 U.S.C. § 134 from a final rejection of claims 22 through 34. Subsequent thereto, claims 28 through 30 were canceled. This leaves claims 22 through 27 and 31 through 34 for our consideration.

Claim 22 is representative of the subject matter on appeal and reads as follows:

22. A cell-free method of synthesizing a desired polypeptide, the method comprising:

(a) adding, to a vessel comprising an ultrafiltration membrane barrier, a mixture comprising: a eukaryotic cell extract capable of supporting *in vitro* translation, an exogenous prokaryotic RNA-polymerase, ATP, GTP, CTP, UTP, amino acids, and a DNA molecule comprising a gene encoding the desired polypeptide under the control of a promoter specific to said exogenous RNA polymerase;

(b) continuously adding to the vessel the substrates ATP, GTP, CTP, UTP and amino acids, at a rate that maintains their initial concentration in the vessel; and

(c) continuously removing from the vessel, through the ultrafiltration barrier, the products of the process, including AMP, GDP, CDP, UDP, pyrophosphate, inorganic phosphate, and the desired polypeptide.

The references relied upon by the examiner are:

Maniatis et al. (Maniatis), "Identification of cDNA Clones by Hybridization Selection," Molecular Cloning: A Laboratory Manual, pp. 345-49 (1982).

Krieg et al. (Krieg), "Functional messenger RNAs are produced by SP6 *in vitro* transcription of cloned cDNAs," Nucleic Acids Research, Vol. 12, No.18, pp. 7057-70 (1984).

Baranoy et al. (Baranoy), "Gene Expression in a cell-free system on the preparation scale," GENE, Vol. 84, pp. 463-66 (1989).

Claims 22 through 27, 31 and 32 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Baranoy and Krieg. Claims 33 and 34 also stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Baranoy, Krieg and Maniatis. We reverse.

### DISCUSSION

As stated by the examiner at page 3 of the Examiner's Answer, the method of claim 22 on appeal differs from that described from Baranoy by "adding an exogenous prokaryotic RNA polymerase to the vessel to transcribe the DNA instead of relying on the RNA polymerase in the cell extract, and by using a [sic, an] eukaryotic cell extract instead of an E. coli (prokaryotic) cell extract." The examiner relies upon Krieg to account for these differences.

Having considered Baranoy and Krieg together, we disagree with the examiner's conclusion that one of ordinary skill in the art would have found the subject matter of claim 22 obvious from a consideration of these two references. In essence, the examiner proposes to add an RNA polymerase to the cell free system of Baranoy and replace the prokaryotic cell extract in Baranoy with a eukaryotic cell extract. While Krieg does describe the use of an RNA polymerase such as SP6 RNA polymerase in a eukaryotic cell extract, we do not find that the references support the modifications to Baranoy proposed by the examiner. While Krieg does use SP6 RNA polymerase for a transcription, the transcription takes place away from the cell extract which will be used in support of in vitro translation. Baranoy discusses a similar system in the paragraph bridging pages 463-64, i.e., the use of mRNA pre-synthesized using SP6 RNA polymerase.

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Viewing the references together, to the extent they suggest the use of a prokaryotic RNA-polymerase with combination with a eukaryotic cell extract, they suggest the use of prokaryotic RNA-polymerase to pre-synthesize mRNA which is subsequently added to the eukaryotic cell extract instead of using the prokaryotic RNA-polymerase combination with the eukaryotic cell extract as required by claim 22 on appeal. In our view, the references only suggest the subject matter of claim 22 when the references are read in light of appellants' disclosure of the present invention. This, of course, amounts to impermissible hindsight.

Maniatis does not rectify the deficiencies of Baranoy and Krieg.

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The decision of the examiner is reversed.

REVERSED

WILLIAM F. SMITH  
Administrative Patent Judge

DOUGLAS W. ROBINSON  
Administrative Patent Judge

CAROL A. SPIEGEL  
Administrative Patent Judge

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