

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ZAFRIRA AVNUR, SUZANNA S. PEDERSEN  
MARY J. CERELLI and THOMAS D. KEMPE

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Appeal No. 95-4473  
Application 08/003,894<sup>1</sup>

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ON BRIEF

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Before WINTERS, WILLIAM F. SMITH and LORIN, Administrative Patent Judges.

WINTERS, Administrative Patent Judge.

DECISION ON APPEAL

This appeal was taken from the examiner's decision rejecting claims 1 through 37, which are all of the claims pending in the application.

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<sup>1</sup> Application for patent filed January 13, 1993.

Claims 1 and 9, which are illustrative of the subject matter on appeal, read as follows:

1. A method for determining the presence of bone alkaline phosphatase in a sample suspected of containing said bone alkaline phosphatase, which comprises:

(a) bringing together in an aqueous medium:

(1) said sample;

(2) a first antibody capable of specifically binding to a first epitopic site on said bone alkaline phosphatase, and

(3) a second antibody capable of specifically binding to a second epitopic site on said bone alkaline phosphatase,

wherein said first and second epitopic sites are different and said first and second antibodies together form an immunocomplex with said bone alkaline phosphatase, if present, and wherein said first and second antibodies exhibit less than 1% cross-reactivity with liver alkaline phosphatase and are selected from the group consisting of a monoclonal antibody capable of binding to the epitopic site recognized by a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11106, a monoclonal antibody capable of binding to the epitopic site recognized by a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11107, and a monoclonal antibody capable of binding to the epitopic site recognized by a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11108, with the proviso that said first and second antibodies are different; and

(b) examining said medium for the presence of said immunocomplex, the presence thereof being related to the presence of bone alkaline phosphatase in said medium.

9. A method for determining the presence of bone alkaline phosphatase in a

sample suspected of containing said bone alkaline phosphatase which comprises;

(a) bringing together in an aqueous medium:

(1) said sample;

(2) a first antibody capable of specifically binding to a first epitopic site on said bone alkaline phosphatase,

(3) a second antibody capable of specifically binding to a second epitopic site on said bone alkaline phosphatase,

wherein said first and second epitopic sites are different and said first and second antibodies together form an immunocomplex with said bone alkaline phosphatase, if present, and wherein said first and second antibodies are selected from the group consisting of a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11106, a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11107 and a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11108, with the proviso that said first and second antibodies are from different cell lines; and

(b) examining said medium for the presence of said immunocomplex, the presence thereof being related to the presence of bone alkaline phosphatase in said medium.

The references relied on by the examiner are:

Hill et al. (Hill)                      EP 0 381 450                      Aug. 08, 1990

Nagoya et al., "Detection of Bone-type Alkaline Phosphatase by Monoclonal Antibodies Reacting With Human Osteosarcoma-associated Antigen", Jpn. Cancer Res., Vol. 82, pp. 862-870, July 1991. (Nagoya)

Previously entered rejections under 35 USC § 112, first and second paragraphs,

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have been expressly withdrawn. See the Examiner's Answer, pages 1 and 2.

Furthermore, we note the rejection of claims 35 through 37 under 35 USC § 102(b) as anticipated by or, in the alternative, under 35 USC § 103 as unpatentable over Hill or Nagoya set forth in the final rejection, paper no. 9, page 8. That rejection was not repeated or referred to in the Examiner's Answer. The only plausible interpretation which these facts permit is that the rejection of claims 35 through 37 on prior art grounds has been dropped. See Paperless Accounting v. Bay Area Rapid Transit System 804 F.2d 659, 663, 231 USPQ 649, 651-52 (Fed. Cir. 1986).

The issue remaining for review is whether the examiner erred in rejecting claims 1 through 34 under 35 USC § 102(b) as anticipated by, or, in the alternative, under 35 USC § 103 as unpatentable over Hill or the combined disclosures of Hill and Nagoya.

On consideration of the record, we reverse the rejection of claims 9 through 16, 26, 30 through 32, and 34. However, we affirm the rejection of claims 1 through 8, 17 through 25, 27 through 29, and 33.

#### DISCUSSION

On reflection, we believe that a rational disposition of this appeal requires consideration of the following groups of claims: (I) Claims 9 through 16, 26, 30 through 32, and 34, drawn to methods reciting specific monoclonal antibodies, i.e., only those

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monoclonal antibodies produced by hybridoma cell line ATCC No. HB 11106, hybridoma cell line ATCC No. HB 11107, or hybridoma cell line ATCC No. HB 11108; and (II) claims 1 through 8, 17 through 25, 27 through 29, and 33, drawn to methods reciting families of monoclonal antibodies defined functionally. The former claims are strictly limited to the specified monoclonal antibodies, produced by the specified hybridoma cell lines, and do not extend to "functional equivalents." The latter claims embrace families of monoclonal antibodies, related by their capability of binding to specified epitopic sites and having a specified low level of cross-reactivity with liver alkaline phosphatase. It may be said that the latter claims read on monoclonal antibodies produced by hybridoma cell line ATCC No. HB 11106, hybridoma cell line ATCC No. HB 11107, or hybridoma cell line ATCC No. HB 11108 or "functional equivalents" thereof. For the purposes of this appeal, it is important to keep in mind the distinction between these groups of claims because the latter are broader and more vulnerable to the cited prior art.

Respecting claims 9 through 16, 26, 30 through 32 and 34, it is incumbent on the examiner to explain how the applied prior art describes (35 USC § 102) or would have suggested (35 USC § 103) and enabled a person having ordinary skill to prepare the specific monoclonal antibodies produced by hybridoma cell line ATCC No. HB 11106, hybridoma cell line ATCC No. HB 11107 or hybridoma cell line ATCC No. HB 11108. Again, these claims recite three specific monoclonal antibodies, no more and no less; they

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do not extend to "functional equivalents". Having carefully reviewed the Examiner's Answer and Supplemental Answer, we find that the examiner does not adequately explain how a person having skill would have been led from "here to there", i.e. from the monoclonal antibodies disclosed by Hill or Nagoya to the specific monoclonal antibodies recited in claims 9 through 16, 26, 30 through 32, and 34. The examiner does not establish that the prior art rejection, whether predicated on 35 USC § 102 or 35 USC § 103, is supported by references which contain an enabling disclosure. See In re Hoeksema 399 F.2d 269, 273, 158 USPQ 596, 600-601 (CCPA 1968).

The rejection of claims 9 through 16, 26, 30 through 32, and 34 is reversed.

Respecting claims 1 through 8, 17 through 25, 27 through 29, and 33, appellants present two principal arguments explaining why the claims are patentable under 35 USC § 102 or 35 USC § 103. First, appellants argue that the preparative technique for preparing monoclonal antibodies, disclosed by Hill or Nagoya, is different from their technique for preparing a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11106, hybridoma cell line ATCC No. HB 11107, or hybridoma cell line ATCC No. HB 11108. Second appellants rely on the limitations in these claims requiring that the monoclonal antibodies exhibit less than one percent cross-reactivity with liver alkaline phosphatase. The arguments lack merit.

The Hill reference here constitutes the closest prior art. We find no error in the

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examiner's determination that Hill uses an immunogen which reasonably appears to contain the epitope recognized by a monoclonal antibody produced by hybridoma cell line ATCC No. HB 11106, hybridoma cell line ATCC No. HB 11107, or hybridoma cell line ATCC No. HB 11108. On this record, therefore, we find it reasonable to conclude that a person having ordinary skill, armed with the disclosure of Hill, would have produced monoclonal antibodies which are "functionally equivalent" to the antibodies recited in claims 35 through 37 and which satisfy the criteria set forth in claims 1 through 8, 17 through 25, 27 through 29 and 33.

In the briefings before this merits panel, in the Kempe Declaration executed April 25, 1994, and in the Kempe Declaration executed September 28, 1994, appellants devote much attention to the claim limitations requiring that their monoclonal antibodies exhibit less than one percent cross-reactivity with liver alkaline phosphatase. However, we find no error in the examiner's determination that appellants have not established that the "cross-reactivity" limitation serves to patentably distinguish over the cited prior art. On this point, we agree with the findings set forth in the Examiner's Answer and Supplemental Answer. Note particularly the Supplemental Answer, page 3, last full paragraph.

The rejection of claims 1 through 8, 17 through 25, 27 through 29 and 33 on prior art

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grounds is affirmed.

CONCLUSION

For the reasons set forth in the body of this opinion, we reverse the examiner's prior art rejection of claims 9 through 16, 26, 30 through 32 and 34. We affirm the rejection of claims 1 through 8, 17 through 25, 27 through 29 and 33. The rejection of claims 35 through 37 on prior art grounds has been dropped. Accordingly, the examiner's decision is affirmed in part.

AFFIRMED IN PART

SHERMAN D. WINTERS	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
WILLIAM F. SMITH	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
	)	
	)	
HUBERT C. LORIN	)	
Administrative Patent Judge	)	

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