

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID M. GOLDENBERG and HANS J. HANSEN

Appeal No. 1997-2393
Application No. 08/183,381

ON BRIEF¹

Before McKELVEY, Senior Administrative Patent Judge, ADAMS, and MILLS,
Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 5-22, 24-28, 34 and 35, which are all the claims pending in the application.

¹ In accordance with 37 CFR 1.194(c), the Board decided that an oral hearing was not necessary in this appeal. Therefore, appellants' request for oral hearing was vacated (Paper No. 31, mailed January 10, 2001).

Claim 1 is illustrative of the subject matter on appeal and is reproduced below:

1. A method of stimulating an immune response in a human against malignant cells or an infectious agent, which comprises the step of administering to said human an immunogenic amount of a baboon anti-idiotypic antibody or antibody fragment that acts as an immunogenic functional mimic of an antigen that is a marker for a malignant cell or an infectious agent.

The references relied upon by the examiner are:

Thornton et al. (Thornton)	4,908,203	Mar. 13, 1990
Hellstrom et al. (Hellstrom)	4,918,164	Apr. 17, 1990
Rubinstein et al. (Rubinstein)	5,101,017	Mar. 31, 1992

Haagensen et al. (Haagensen), "Evaluation of baboon antiserum to carcinoembryonic antigen," Clinical Chemistry, Vol. 26, pp. 1787-1790 (1980)

Huberman et al. (Huberman), "Non-human primate (Baboon) anti-carcinoembryonic antigen antibody infusion in patients with metastatic adenocarcinoma," Cancer Immunol. Immunother., Vol. 23, pp. 137-142 (1986)

Estabrook et al. (Estabrook), "Non-human primate (Baboon) anti-gross cystic disease fluid protein-15 antibody infusion in four women with metastatic breast carcinoma," Cancer Immunol. Immunother., Vol. 23, pp. 143-147 (1986)

Herlyn et al. (Herlyn), "Anti-idiotypic immunization of cancer patients: Modulation of the immune response," Proc. Natl. Acad. Sci, USA, Vol. 84, pp. 8055-8059 (1987)

Hoffman et al. (Hoffman), "Naturally acquired antibodies to sporozoites do not prevent malaria: vaccine development implications," Science, Vol. 237, pp. 639-642 (1987)

Barnes, "Obstacles to an AIDS vaccine," Science, Vol. 240, pp. 719-721 (1988)

Klein et al. (Klein), "Effects of anti-antibodies on radiolabeled antibody therapy," Antibody, Immunoconjugates and Radiopharmaceuticals, Vol. 1, pp. 55-64 (1988)

Bloom, "Vaccines for the Third World," Nature, Vol. 342, pp. 115-120 (1989)

Butcher, "Mechanisms of immunity to malaria and the possibilities of a blood-stage vaccine: a critical appraisal," Parasitology, Vol. 98, pp. 315-327 (1989)

Monestier et al. (Monestier), "Syngeneic anti-idiotypic monoclonal antibodies to murine anticarcinoembryonic antigen monoclonal antibodies," Cancer Research, Vol. 49, pp. 123-126 (1989)

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Parkhouse et al. (Parkhouse), "Antigens of parasitic helminths in diagnosis, protection and pathology," Parasitology, Vol. 99, p. S5-S19 (1989)

Good², "A malaria vaccine strategy based on the induction of cellular immunity" Immunology Today, Vol. 13, pp. 126-130 (1992)

Audibert et al. (Audibert), "Adjuvants: current status, clinical perspectives and future prospects," Immunology Today, Vol. 14, pp. 281-284 (1993)

Letvin, "Vaccines against human immunodeficiency virus – progress and prospects," The New England Journal of Medicine, Vol. 329, No. 19, pp. 1400-1405 (1993)

The references relied upon by appellants are:

Nepom et al. (Nepom), "Induction of immunity to a human tumor marker by in vivo administration of anti-idiotypic antibodies in mice," Proc. Natl. Acad. Sci. USA, Vol. 81, pp. 2864-2867 (1984)

McNamara et al. (McNamara), "Monoclonal idiotope vaccine against streptococcus pneumoniae infection," Science, Vol. 226, pp. 1325-1326 (1984)

Kennedy et al. (Kennedy), "Antibody to Hepatitis B virus induced by injecting antibodies to the idiotype," Science, Vol. 223, pp. 930-931 (1984)

Stein et al. (Stein), "Neonatal administration of idiotypic or antiidiotypic primes for protection against *Escherichia coli* K13 infection in mice," Journal of Exp. Med., Vol. 160, pp. 1001-1011 (1984)

Raychaudhuri et al. (Raychaudhuri), "Tumor-specific idiotypic vaccines, analysis of the tumor-related network response induced by the tumor and by internal image antigens (Ab2 β)," J. Immunology, Vol. 139, pp. 271-278 (1987)

Dalgleish et al. (Dalgleish), "Anti-idiotypic antibodies as immunogens: idiotype-based vaccines," Vaccine, Vol. 6, pp. 215-220 (1988)

Kresina et al. (Kresina), "Antiidiotypic antibody vaccine in murine *Schistosomiasis mansoni* comprising the internal image of antigen," J. Clin. Invest. Vol. 83, pp. 912-920 (1989)

² We note that the examiner identifies the author of this reference as Riley. However, Riley is the author of the "Comment by Eleanor Riley" which follows (at pages 129-130), and comments on, the Good article (at pages 126-130). The author of the reference is correctly identified herein above.

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Powell et al. (Powell), "Induction of effective immunity to moloney murine sarcoma virus using monoclonal anti-idiotypic antibody as immunogen," J. Immunology, Vol. 142, pp. 1318-1324 (1989)

Thanavala, "Anti-idiotypic vaccines," TibTech, Vol. 7, pp. 62-66 (1989)

Levy et al. (Levy), "Therapy of lymphoma directed at idiotypes," Vol. 10, pp. 61-68 (1990)

Losman et al. (Losman), "Baboon anti-idiotypic antibodies mimic a carcinoembryonic antigen epitope," Int. J. Cancer, Vol. 46, pp. 310-314 (1990)

Bhattacharya-Chatterjee et al. (Bhattacharya-Chatterjee), "Anti-idiotypic monoclonal antibodies as vaccines for human cancer," Intern. Rev. Immunol., Vol. 7, pp. 289-302 (1991)

GROUND OF REJECTION³

Claims 22 and 24-28 stand rejected⁴ under 35 U.S.C. 112, first paragraph, as being based on an insufficient disclosure to support or enable the scope of the claims currently claimed.

Claims 1, 5-8, 14-18, 22, 24-28, 34 and 35 stand rejected under 35 U.S.C. § 103 as being unpatentable over Hellstrom in view of the combined teachings of Klein, Estabrook, Huberman and Haagensen.⁵

Claims 9-13 and 19-21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Thornton and Rubinstein in view of the combined teachings of Klein, Estabrook, Huberman and Haagensen further in view of Herlyn.

³ We note the examiner withdrew the rejection of claims 1, 5-21, 34 and 35 under 35 U.S.C. § 112, first paragraph. See Answer, page 2.

⁴ We note the rejection of claims 22, and 24-28 is directly connected and relates to the objection to the specification. In re Hengehold, 440 F.2d 1395, 1403-1404, 169 USPQ 473, 479-480 (CCPA 1971).

⁵ We note the following typographical error. Canceled claim 23 was included in the statement of the rejection. This typographical error was corrected herein above.

We reverse.

DISCUSSION

In reaching our decision in this appeal, we have given consideration to the appellants' specification and claims, and to the respective positions articulated by the appellants and the examiner. We make reference to the examiner's Answer⁶ for the examiner's reasoning in support of the rejections. We further reference appellants' Brief⁷ for the appellants' arguments in favor of patentability.

THE REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH:

According to the examiner (Answer, page 7) “[a]pplicant [sic] broadly claims [sic] an anti-idiotypic vaccine to prevent cancer, AIDS and malaria, but the specification fails to enable the vaccine(s) and effectively teach how to make and/or use said vaccines to achieve this.” We note that while the examiner's rejection is centered on AIDS, malaria and cancer, none of appellants' generic claims 22 and 24-28 are so limited. In fact, the examiner withdrew her rejection under 35 U.S.C. § 112, first paragraph with regard to claims containing limitations to AIDS, malaria and cancer. See Answer, page 2.

In response to the examiner's rejection appellants submit a number of pre-filing date references (Brief, pages 9-12, Exhibits 2-13) illustrating the state of the art with respect to anti-idiotypic vaccines developed against infectious organisms and tumors. See e.g. Thanavala (Exhibit 12, page 64) “anti-idiotypic antisera

⁶ Paper No. 27, mailed July 10, 1996.

⁷ Paper No. 26, received March 5, 1996.

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induced protective immunity against the original [Trypanosoma] antigenic variant to which the Ab₁ was directed.”

It is well settled that the examiner bears the initial burden of providing reasons why a supporting disclosure does not enable a claim. In re Marzocchi, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971). In this regard we direct the examiner’s attention to the courts statements in Atlas Powder Co. v. E.I. DuPont De Nemours & Co., 750 F.2d 1569, 1576-77, 224 USPQ 409, 414 (Fed. Cir. 1984) that:

Even if some of the claimed combinations were inoperative, the claims are not necessarily invalid. “It is not a function of the claims to specifically exclude ... possible inoperative substances ...” In re Dinh-Nguyen, 492 F.2d 856, 859-59, 181 USPQ 46, 48 (CCPA 1974)(emphasis omitted). Accord, In re Geerdes, 491 F.2d 1260, 1265, 180 USPQ 789, 793 (CCPA 1974); In re Anderson, 471 F.2d 1237, 1242, 176 USPQ 331, 334-35 (CCPA 1971). Of course, if the number of inoperative combinations becomes significant, and in effect forces one of ordinary skill in the art to experiment unduly in order to practice the claimed invention, the claims might indeed be invalid. See, e.g., In re Cook, 439 F.2d 730, 735, 169 USPQ 298, 302 (CCPA 1971).

On this record, the examiner has limited the scope of appellants’ generic invention to AIDS, malaria and cancer. In response to appellants’ citation to prior art supporting the scope of their claims, the examiner argued (Answer, that “the scope of enablement is not met, for the recitation of preventing cancer or infections, such as HIV or malaria as exemplified.”

In our opinion, the examiner failed to provide the evidence necessary to demonstrate that appellants’ disclosure does not enable their claimed invention. While some of the claimed combinations may be inoperative, the examiner failed to

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establish that the number of inoperative combinations is so significant, that one of ordinary skill in the art would have to experiment unduly in order to practice the claimed invention.

Accordingly, we reverse the examiner's rejection of claims 22 and 24-28 under 35 U.S.C. 112, first paragraph.

THE REJECTIONS UNDER 35 U.S.C. § 103:

The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Claims 1, 5-8, 14-18, 22, 24-28, 34 and 35:

According to the examiner (Answer, page 8) Hellstrom "teach[es] the use of anti-idiotypic antibody to CEA for tumor therapy in humans ... [and] suggest[s] the generation of anti-idiotypic antibody in animals to include primates and chimpanzees." The examiner relies on Klein (Answer, page 9) to teach "there was a lack of anti-[]species antibody response in patients to baboon IgG, presumably due to the similarity of baboon and human IgG...." The examiner relies on Estabrook (Answer, page 9) to teach that "baboon antibody could be infused with no observed toxicity (hypersensitivity reactions) and no anti-baboon antibody or anti-species antibody response...." The examiner relies on Huberman (Answer, page 9) to teach "baboon ... antibody resulted in no acute hypersensitivity reactions...." The examiner relies on Haagensen (Answer, page 10) to teach that "baboon antisera is thus potentially a better source of purification of anti-CEA antibody for in vivo antibody localization of human carcinoma."

Appellants argue (Brief, pages 13-14) that Hellstrom “does not suggest the use of baboon anti-idiotypic antibodies” and none of the secondary references relied on by the examiner teach anti-idiotypic antibodies. Appellants explain (Brief, page 15) that the “Klein, Estabrook and Huberman references teach that the immunogenic response against foreign antibodies can be minimized by treating human subjects with primate antibodies.” Appellants argue (Brief, page 15) that this “is the opposite of the use of a baboon-produced anti-idiotypic antibody to induce an immunogenic response. Thus, the cited references teach away from the claimed invention.” In addition, appellants argue (Brief, page 14) that “the Haagensen publication ... suggest[s] nothing about the efficacy of baboon anti-idiotypic antibodies.”

We agree with appellants. While a person of ordinary skill in the art may possess the requisite knowledge and ability to modify the protocol taught by Hellstrom, the modification is not obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d 900, 902, 211 USPQ 1125, 1127 (Fed. Cir. 1984). Here we see no such reason to modify Hellstrom with the secondary references applied by the examiner. As explained by appellants the Klein, Estabrook and Huberman references teach that treating human subjects with primate antibodies can minimize the immunogenic response against foreign antibodies. Therefore the references teach away from the claimed invention, which requires the primate antibody to stimulate an immune response. Furthermore, while Haagensen suggests that immunization of primates may result in antisera with

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enhanced or CEA-specific antigenic determinants, the reference is silent with respect to anti-idiotypic antibodies.

Therefore in our opinion the examiner failed to meet her burden of establishing a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Accordingly, we reverse the examiner's rejection of claims 1, 5-8, 14-18, 22, 24-28, 34 and 35 under 35 U.S.C. § 103 over Hellstrom in view of the combined teachings of Klein, Estabrook, Huberman and Haagensen.

Claims 9-13 and 19-21:

According to the examiner (Answer, page 11) Thornton "teach the use of anti-idiotypic antibodies to an epitope on gp120 as a therapeutic ... [and] Rubinstein ... teach the use of anti-idiotypic antibodies to P. vivax.... The prior art teach the inventive concepts, but differs in not raising the anti-idiotypic antibody in a baboon." The examiner applies (Answer, page 12) Herlyn to "teach that the results of using anti-idiotypic antibody have implications for cancer immunotherapy and also suggest a general applicability of Ab2 ... immunizations of humans in vaccination approaches to pathogens...." However, Herlyn also does not teach baboon anti-idiotypic antibodies. To make up for the deficiencies of Thornton, Rubinstein and Herlyn the examiner applies the teachings of Klein, Haagensen, Estabrook and Huberman discussed supra.

Appellants argue (Brief, page 17) that "neither the Thornton reference nor the Rubinstein reference suggests the use of baboon anti-idiotypic antibodies." In addition, appellants argue (Brief, page 18) that "Herlyn et al. performed their studies

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using goat anti-idiotypic antibodies. This reference, therefore, suggests nothing about baboon anti-idiotypic antibodies.” With respect to Klein, Estabrook and Huberman, appellant’s argue (Brief, page 18) that these “publications teach away from appellants’ baboon anti-idiotypic antibody vaccines” and Haagensen “suggests nothing about baboon anti-idiotypic antibodies...,” as discussed supra.

We agree with appellants. As set forth above, the mere fact that the prior art could be modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Gordon, 733 F.2d 900, 902, 211 USPQ 1125, 1127 (Fed. Cir. 1984). Here we see no such reason to modify Thornton or Rubinstein with the secondary references applied by the examiner. As explained by appellants Klein, Estabrook and Huberman references teach that the immunogenic response against foreign antibodies can be minimized by treating human subjects with primate antibodies and therefore teach away from the claimed invention, which requires the primate antibody to stimulate an immune response. Haagensen suggests that immunization of primates may result in antisera with enhanced or CEA-specific antigenic determinants, however, the reference is silent with respect to anti-idiotypic antibodies, and the Herlyn reference uses goat, not baboon, anti-idiotypic antibodies.

Therefore in our opinion the examiner failed to meet her burden of establishing a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Accordingly, we reverse the examiner’s rejection of claims 9-13 and 19-21 under 35 U.S.C. § 103 over Thornton

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and Rubinstein in view of the combined teachings of Klein, Estabrook, Huberman
and Haagensen further in view of Herlyn.

REVERSED

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Fred E. McKelvey, Senior)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
Donald E. Adams)	
Administrative Patent Judge)	APPEALS AND
)	
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Demetra J. Mills)	
Administrative Patent Judge)	

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Foley & Lardner
P.O. Box 299
Alexandria, VA 22313