

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MAX L. BIRNSTIEL, MATTHEW COTTEN,
and ERNST WAGNER

Appeal No. 1999-1405
Application 08/098,268

HEARD:
September 11, 2001

Before WINTERS, MILLS, and GRIMES, Administrative Patent Judges.

WINTERS, Administrative Patent Judge.

DECISION ON APPEAL

This appeal was taken from the examiner's decision rejecting claims 58 through 84 and 86 through 94, which are all of the claims pending in the application.

THE INVENTION

The invention relates to protein-polycation conjugates capable of forming soluble complexes with nucleic acids. These conjugates contain, as their protein component,

an antibody directed against a cell surface protein, with the ability to bind to the cell surface protein, so that the complexes formed are absorbed into cells which express the cell surface protein and are expressed therein. Complexes for use in pharmaceutical preparations contain a therapeutically or gene therapeutically active nucleic acid.

Claim 58, which is illustrative of the subject matter on appeal, reads as follows:

58. A protein-polycation conjugate comprising a polycation and an antibody or a fragment thereof that binds to a surface protein of an animal cell, which conjugate is capable of forming a soluble complex with a nucleic acid, and which conjugate, when complexed with said nucleic acid, is capable of being taken up into said cell and delivering the nucleic acid into the cell.

THE REFERENCES

The prior art references relied on by the examiner are:

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|------------------------|-----------|---------------|
| Wu et al. (Wu) | 5,166,320 | Nov.24, 1992 |
| Hirsch et al. (Hirsch) | 5,428,132 | Jun. 27, 1995 |

Knapp et al. (Knapp), "Towards a better definition of human leucocyte surface molecules." Immunology Today, Vol. 10, No. 8, pp. 253-258 (1989)

Hurwitz et al. (Hurwitz), "A conjugate of 5-fluorouridine-poly(L-lysine) and an antibody reactive with human colon carcinoma." Bioconjugate Chemistry, Vol. 1, pp. 285-290 (1990)

Eliasson et al. (Eliasson), "Differential IgG-binding characteristics of staphylococcal protein A, streptococcal protein G, and a chimeric protein AG." Journal of Immunology, Vol. 142, No. 2, pp. 575-581, (January 15, 1989)

Cotton et al. (Cotten), "Transferrin-polycation-mediated introduction of DNA into human leukemic cells: Stimulation by agents that affect the survival of transfected DNA or modulate transferrin receptor levels." Proceedings National Academy of Science USA, Vol. 87, pp. 4033-4037, (June 1990).

THE REJECTIONS

The appealed claims stand rejected as follows:

- (1) Claims 58 through 60, 64, 67, 69 through 82, 87 through 90 and 92 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Wu and Hirsch;
- (2) Claim 63 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Wu, Hirsch, and Hurwitz;
- (3) Claims 61 and 62 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Wu, Hirsch, and Knapp;
- (4) Claims 65, 66, 68, 86 and 91 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Wu, Hirsch, and Eliasson; and
- (5) Claims 83, 84, 93 and 94 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Wu, Hirsch, and Cotten.

Respecting each rejection under 35 U.S.C. § 103(a), the question presented is whether the examiner established a prima facie case of obviousness. On this record, applicants do not rely on any rebuttal evidence, i.e., objective evidence of non-obviousness, which would serve to rebut a prima facie case.

DELIBERATIONS

Our deliberations in this matter have included evaluation and review of the following materials:

- (1) the instant specification, including Figures 1 through 7 and all of the claims on appeal;

- (2) applicants' Appeal Brief (Paper No. 28)¹;
- (3) the Examiner's Answer (Paper No. 29); and
- (4) the above-listed prior art references.

DISPOSITION

On consideration of the record, including the above-listed materials, we affirm each of the examiner's prior art rejections. Having reviewed each rejection in light of the argument presented in applicants' Brief, we agree that the subject matter sought to be patented in claims 58 through 84 and 86 through 94 would have been obvious within the meaning of 35 U.S.C. § 103(a) based on the cited prior art. We agree with the position ably and thoroughly set forth in the Examiner's Answer (Paper No. 29), including the statement of rejections and the response to applicants' argument on appeal. Accordingly, we adopt that position as our own, and we find it unnecessary to belabor the record with further comment.

The examiner's decision, rejecting claims 58 through 84 and 86 through 94, is affirmed.

¹ As stated in 37 CFR § 1.192(a)(1998), the Appeal Brief "must set forth the authorities and arguments on which appellant will rely to maintain the appeal. Any arguments or authorities not included in the Brief will be refused consideration by the Board of Patent Appeals and Interferences, unless good cause is shown." We have carefully considered the arguments and authorities set forth in applicants' Brief (Paper No. 28). We have not, however, combed the record to "pull out" arguments and authorities presented on applicants' behalf in response to previously entered Office actions. We have declined applicants' invitation, in the Appeal Brief, to consider arguments presented in papers filed March 19, 1996; December 24, 1996; and January 16, 1998.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Sherman D. Winters
Administrative Patent Judge

Demetra J. Mills
Administrative Patent Judge

Eric Grimes
Administrative Patent Judge

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