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VOSSIUS & PARTNER

Postal Address: P. O. Box 86 07 67 81634 München Germany

To the
European Patent Office

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PATENTANWÄLTE
EUROPEAN PATENT ATTORNEYS
Dr. VOLKER VOSSIUS, Dipl.-Chem. (-6/1992)
Dr. PAUL TAUCHNER, Dipl.-Chem.
Dr. DIETER HEUNEMANN, Dipl.-Phys.
Dr. PETER A. RAUH, Dipl.-Chem.
Dr. GERHARD HERMANN, Dipl.-Phys.
JOSEF SCHMIDT, Dipl.-Ing.
Dr. HANS-RAINER JAENICHEN, Dipl.-Biol.
Dr. ALEXA VON UEXKÜLL, M.Sc.
Dr. RUDOLF WEINBERGER, Dipl.-Chem.
Dr. WOLFGANG BUBLAK, Dipl.-Chem.
EUROPEAN PATENT ATTORNEY
Dr. RENATE BARTH, Dipl.-Chem.
RECHTSANWÄLTIN
HELGA TREMMEL

SIEBERTSTRASSE 4
81675 MÜNCHEN
GERMANY
TELEPHONE: (089) 47 40 75
CABLE: BENZOLPATENT MÜNCHEN
TELEX: 529 453 VOPAT D
TELEFAX: (089) 4 70 60 53

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Enzo Biochem Inc.
Our ref.: S 808 EP

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The following observations are made by the Patentee in response to the oppositions filed by Boehringer (Opponent I) on December 23, 1993 and the opposition filed by Biotest (Opponent II) on January 3, 1994:

1. The references cited during the opposition proceedings

The following references were cited by Opponent I (O1 to O12) and Opponent II (D1 to D6):

U.S. Patent No. 4,358,535 (O1)

Clinica Chimica Acta 81: 1-40 (1977) (O2)

Proc. Natl. Acad. Sci USA vol. 78, pp. 6633-6637, November 1981 (O3)

Proc. Natl. Acad. Sci. USA. vol. 79, pp. 7331-7335, December 1982 (O4)

Proc. Natl. Acad. Sci. USA vol., 79, pp. 4381-4385, July 1992 (O5)

Proc. Natl. Acad. Sci. USA, vol. 80, pp. 4045-4049, July 1983 (O6)

EP-A-0 063 879 (O7)

DE-A-29 15 082 (O8)

DE-A-27 24 486 (O9)

US-A-4,271,140 (O10)

Journal of Histochemistry and Cytochemistry Vol. 27, 8, 1131-1139 (1979) (O11)

Biochemie 1972, 54, 837-842 (O12)

EPA-82301804.9 (D1)

EPA-82303701.5 (D2)

US-Patent No. 4,358,535 (D3)

Exp. Cell Res. 128 (1980), pp. 485-490, J. Bauman et al., "A new method for fluorescence microscopical localization of specific DNA sequences by in situ hybridization of fluorochrome-labeled RNA" (D4)

GB-A-2,019,408 (D5)

GB-A-2,026,690 (D6)

O1 is identical to D3 and O7 is identical to D1.

2. The subject matter of EP-B-117 440

2.1. The technical problem underlying the present invention is to provide a method for detecting a polynucleotide sequence.

The solution is achieved by a method whereby the sequence is fixed to a solid support in a non-porous, transparent or translucent system, a hybrid is formed between the sequence and a polynucleotide probe having a chemical label which comprises a signalling moiety capable of generating a soluble signal, directly or indirectly, and the soluble signal is generated and

detected. The essential features of the claimed process are outlined in claim 1 which reads as follows:

"A method for detecting a polynucleotide sequence which comprises:

- fixing said polynucleotide sequence to a solid support which comprises or is contained within a transparent or translucent system, such that the polynucleotide is in a single-strand form and is capable of hybridizing to complementary nucleic acid sequences;
- forming an entity comprising said polynucleotide sequence hybridized to a polynucleotide or oligonucleotide probe, said probe having attached thereto a chemical label comprising a signalling moiety capable of generating a signal; and
- generating and detecting a signal, characterized in that the transparent or translucent system is a non-porous system and the generated signal is a soluble signal."

Dependent claims 2 to 16 and 20 to 25 are directed to specific embodiments of features of claim 1.

Claims 17 to 19 are directed to a device and a kit, respectively, to be used in the method of claim 1.

Claim 26 is directed to a transparent or translucent solid, non-porous substrate, and reads as follows:

"A transparent or translucent solid, non-porous substrate having fixed thereto a double-stranded polynucleotide, one of the strands of said double-stranded polynucleotide being a non-radioactive chemically labelled polynucleotide or comprising a non-radioactive chemically-labelled nucleotide as a nucleotide component of said one strand, wherein said

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chemically labelled polynucleotide comprises or has attached thereto a chemical label comprising a signalling moiety which generates a soluble signal which is detected spectrophotometrically."

Claims 27 to 28 are specific embodiments of the subject matter of claim 26.

Claim 29 is also directed to a method for detecting a polynucleotide sequence and comprises the following steps:

- fixing a polynucleotide or oligonucleotide probe which has attached thereto a chemical label comprising a signalling moiety capable of generating a signal to a solid support which comprises or is contained within a transparent or translucent system such that said probe is in single-stranded form and is capable of hybridizing to complementary nucleic acid sequences;
- forming an entity comprising said probe hybridized to said polynucleotide sequence, and,
- generating and detecting a signal, characterized in that the transparent or translucent system is non-porous and the generated signal is a soluble signal.

3. The patentability of the subject matter of the patent in suit

3.1. The Opponents, Boehringer (Opponent I) and Biotest (Opponent II), maintain that the present patent is unpatentable over the prior art for the same reasons that were considered and dismissed during the prosecution of the present patent and its corresponding US Patent. The references cited by the Opponents are either identical to or less relevant than the

references cited and considered by the Examining Division during substantive examination. The references were overcome by Patentee's arguments and amendments to the claims and found not to stand in the way of the patentability of the invention. Essentially, Opponents are re-raising and re-arguing prior art work that was distinguished to the satisfaction of the European and US Patent Examiners.

Specifically, both opponents cited the work of David Ward and rely heavily on articles published by him and his colleagues to support their arguments that the claimed invention is unpatentable. In fact, Opponent's I entire argument is based on David Ward's work since all the primary references cited by this Opponent for both lack of novelty and inventive step were authored or co-authored by David Ward. See Opponent's I opposition papers and cited references O3, O4, O5, O6 and O7. Likewise, Opponent II cites the European patent application wherein David Ward is named as an inventor, see D1 of Opponent's II enclosures, as does Opponent I (see reference O7); a reference that was considered repeatedly during prosecution of the contested patent.

David Ward's work led to the discovery that nucleic acids could be labelled in positions that do not interfere with the hybridization ability of the acids. The inventive aspects of this work are best described by European patent EP 63,879 and U.S. Patent No. 5,328,824, of which patentee is the exclusive licensee. Patentee's licensee status as to the Ward patents give it a thorough and unique understanding of the work and the cited Ward, et al., publications.

The Ward articles teach nucleic acid probes labelled in non-destructive positions which can be used to hybridize to specific target sequences of nucleic

acids. The articles also disclose a process for enzymatically incorporating a label into nucleic acids. The detection systems of the Ward articles are based on the generation of a signal which is localized and precipitated. In fact, these are the only systems which would be feasible for the objectives of the articles, which is to label and localize specific sequences. Transparent or translucent, non-porous systems that produce soluble signals certainly are not taught by the Ward articles since such systems would not perform the objective of localizing nucleic acid sequences. Moreover, although some of the articles may suggest using a transparent, non-porous system (e.g. a slide) these characteristics are not taught to be requirements of the disclosed systems; some have them, some don't. And nowhere is it suggested that such systems be used with labels that generate soluble signals. Thus, the cited references teach away from the instant invention.

3.2. Arguments for patentability to counter opposition I

3.2.1. Novelty

Opponent I argues lack of novelty of claim 26 based on O3, O4, O5 and O6. As previously noted in 3.1, all of these cited references were authored or co-authored by David Ward.

Claim 26 is directed to a transparent or translucent, solid, non-porous substrate having fixed to it a double-stranded polynucleotide, in which one of the strands comprises a chemical label that comprises a signalling moiety which generates a soluble signal which is detected spectrophotometrically.

Opponent I argues that reference O3 discloses a method of gene mapping by in-situ hybridization of

biotin-labelled probes wherein detection is by antibiotin antibody-alkaline phosphatase. Opponent I assumes and asserts that the signals generated in the methods of O3 are soluble by referencing O2, a review article of enzyme-immunoassays for proteins which states that alkaline phosphatase is capable of generating a soluble signal.

Reference O3 discloses a process for enzymatically incorporating a label into nucleic acid probes for in-situ hybridization with target sequences, and detection of the labelled, bound probes by detection systems that require a signal which is localized and a precipitate -- e.g. dot or blot systems. O3 teaches away from the instant case since the signals generated in the methods and systems of O3 are required to be a localized signal or a precipitate. O3 does not disclose or suggest, in any manner, the generation of a soluble signal, or a system, substrate or method in which a soluble signal is generated and detected in a transparent or translucent, non-porous system.

The abstract of O3, lines 12-14, specifically states that the described biotin-labelled polynucleotides can be selectively immunoprecipitated in the presence of antibiotin antibody and Staphylococcus aureus Protein A. Additionally, in the passage emphasized by Opponent I, page 6637, column 2, lines 1-11, the reference states:

> "Our studies have led to the development of a rapid method of gene mapping by in situ hybridization that uses rabbit antibiotin antibody and fluorescein-labeled goat anti-rabbit IgG to identify the loci of hybridized Bio-DNA probes and a histochemical procedure for detecting biotin-labeled sequences on nitrocellulose filters that uses anti-

> body-alkaline phosphatase conjugates (unpublished data). Second, the ability to synthesize immunogenic DNAs (and to a lesser extent RNAs) enzymatically, both in purified in vitro systems and in crude cell lysates, may allow the use of immunoprecipitation techniques". (emphasis added)

It is well known in the art that the histochemical procedure referred to in the article results in a precipitated signal within the cellular morphology. Likewise, the reference to gene mapping and determining the loci of hybridized Bio-DNA probes indicates a precipitated, localized signal. Thus, O3 is limited to the generation of an insoluble product.

Opponent I also emphasizes the portion of the reference which explains that biotin-labeled polymers can be used in conjunction with appropriate immunofluorescent, immunohistochemical, or affinity reagents for detecting or localizing specific sequences in chromosomes, cells, tissue sections and blots. Again the passage actually supports the fact that O3 generates an insoluble signal. Quite clearly, the in-situ hybridization methods of O3, while capable of being performed on non-porous, solid supports that may be (but need not be) transparent or translucent, has to be limited to the generation of a localized signal. In fact, O3 states on page 6633, lines 14-17 that:

> "The specificity and tenacity of the biotin-avidin complex has been exploited to develop methods for the visual localization of specific proteins, lipids and carbohydrates on or within cells." [emphasis added].

By contrast, the signal of the contested patent (and specifically of claim 26) is not localized, nor is it

a precipitate, but it is required to be soluble and detected in a liquid media visually or spectrophotometrically. The signal of O3 is only capable of being detected through precipitation or localization within the confinement of a cellular or chromosomal structure. This is completely different from the present invention.

Opponent's I reliance on reference O2 to assert that the enzymes used in the procedure of O3 are capable of generating soluble signals is inappropriate. Regardless of whether the enzyme is capable of generating a soluble signal, the detection procedures disclosed in O3 are not suitable for the generation and detection of a soluble signal. Combining reference O3 and O2 (which is inadmissible in the assessment of novelty anyway) does not teach or suggest a system, substrate or method wherein a soluble signal can be generated and detected.

Opponent I also asserts that the disclosed procedures of reference O4 and reference O5 destroy the novelty of claim 26. O4 discloses the hybridization of biotinated nucleic acid probes with nucleic acids in tissue samples; O5 discloses a method of detecting Drosophila polytene chromosomes on glass supports using biotin-labeled probes. The detection methods of O4 and O5 use peroxidase. Again, Opponent I relies on reference O2 to assert that the signal generated by the techniques of O4 and O5 may be a soluble signal. As pointed out with respect to O3, whether the enzyme employed is capable of generating a soluble signal does not mean that the detection procedure disclosed in O4 and O5 are suitable for the generation and detection of a soluble signal. They are not.

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Throughout the references, O4 and O5 indicate that the disclosed procedures are for localizing specific sequences; see for instance:

the last sentence of O4's abstract - "The procedure described preserved morphological detail yet is compatible with hybridization conditions and reveals the disposition of actin mRNA during gene expression" (emphasis added);

page 7334 of O4, 1st col., lines 14-17 - "Similar results have been obtained by using avidin complexed to biotinated peroxidase; in this variation of the method the sites of hybridization are localized through the deposition of insoluble enzyme products" (emphasis added);

the first sentence of O5's abstract - "A method is described for localizing DNA sequences hybridized in situ to Drosophila polytene chromosomes" (emphasis added)

Lines 12-16 of O5's abstract - "This immunological approach offers four advantages ... the time required to determine the sites of hybridization is decreased ..." (emphasis added);

Page 4382 of O5, under Detection of Hybridized Probe, third paragraph - "Histo-chemical detection was done by ..." (emphasis added);

Page 4383 of O5, second col., second paragraph - "It was our intention to use

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avidin conjugated to various indicator molecules in order to localize biotin-labeled hybridization probes" (emphasis added).

In addition, the figures of O4 and O5 clearly indicate that the procedures of these references result in the deposition of precipitates, and not the generation of a soluble signal.

Lastly, with respect to novelty, Opponent I argues that reference O6 destroys the novelty of claim 26 even though, as Opponent I acknowledges, the reference was published after the priority date of the present patent. Opponent I argues that the contested patent is not entitled to the priority date (and hence the reference is prior art) because the claimed feature "generating a soluble signal" is not disclosed in U.S. Serial No. 461,469, the priority document.

Contrary to Opponent's I position, throughout the priority document it is indicated that the preferred methods of detection involve spectrophotometric techniques which permit quantitative determination of the bound probes. See for instance page 22, lines 12-21 of the priority document. The originally filed claims also clearly indicate a preference for embodiments wherein the substrate or method permits the transmission of light through the substrate and solution containing the bound probes for color observation or colorimetric determination. See for instance, originally filed claims 34, 36, 38, 56, 62 and 69 of the priority document. Such descriptions can only convey to one skilled in the art the generation and detection of a soluble signal. Accordingly, the priority document explicitly and inherently discloses to one skilled in the art all

the limitations of the claimed invention, including the limitation of "generating a soluble signal". Thus reference O6 is not proper prior art against the subject Patent.

Besides not being a proper prior art reference, O6 is distinguishable from the claimed invention. The reference discloses the hybridization of nucleic acids with biotin-labelled DNA probes on nitrocellulose wherein the signalling moiety is horseradish peroxidase or alkaline phosphatase. As pointed out in its abstract, the reference is directed to the generation of an unsoluble product; see lines 7-10, "... which results in the deposition of a purple precipitate at the sites of hybridization" (emphasis added). As with the other references, the insolubility of the generated signal is a requirement of the disclosed system and needed to fulfill the localization objective.

3.2.2. Inventive step

Opponent I also alleges that claims 1-29 lack an inventive step when examined in light of references O1 through O12. With respect to references O2-O6, the remarks presented hereinabove are equally applicable to Opponent's I lack of inventive step argument. Opponent's I argument is primarily based on references O1 and O7 taken together with reference O2, which as mentioned above is simply a review article indicating that certain enzymes are capable of producing soluble or insoluble signals when used in immunoassays for proteins and antibodies.

Reference O7, like reference O3-O6, is a publication by David Ward and his colleagues: EP Patent No. 63,879, to which patentee is an exclusive licensee.

The remarks presented above for references O3-O5 (especially those presented for O3) are equally applicable to O7. Additionally, reference O7 was repeatedly considered during both the European and U.S. prosecutions and found not to be a bar to patentability. Nowhere does O7 disclose a method or substrate wherein a soluble signal is generated and detected in a transparent or translucent, non-porous system. Combining the reference with O2, which only indicates that certain enzymes are capable of producing a soluble signal, does not provide a method or system which meet the claim limitations.

Similarly, reference O1 was raised during both the European and U.S. prosecutions and determined not to be a bar to patentability. O1 describes a hybridization method in which clinical samples are spotted onto an inert support, such as a nitrocellulose filter. It is especially suitable for screening bacterial colonies for a specific polynucleotide sequence. The cell number may be increased by placing the support on a nutrient medium. In order to allow diffusion of nutrients, the support has to be porous. The preferred method of labeling is with radionuclides (column 3, lines 25-27). This would allow for fast screening of many samples, as the authors point out in column 9, lines 1-5: "Numerous samples may be spotted on the same filter and processed simultaneously, greatly increasing clinical efficiency. The technique therefore offers significant opportunities for large scale epidemiological and surveillance studies". In such a method, the detectable signal must be <u>insoluble.</u> The use of labels other than radionuclides, such as enzymes and fluorescent compounds, would also generate an insoluble signal,

e.g., deposition of colored precipitates, according to this method.

Additionally, O1 does not disclose a transparent or translucent, non-porous system in which a soluble signal may be generated. Accordingly, the claimed method, by utilizing a solid support and a soluble signal in a transparent, non-porous system, is unobvious from the disclosure of O7, either alone or in combination with O2. The invention of the present patent allows for accurate quantitation of the target sequence by visual or spectrophotometric techniques. There is no suggestion or disclosure in O1 of accurately quantitating the target polynucleotide by means of a soluble signal in a transparent, non-porous system.

Moreover, the combining of references O1 and O2 is improper. Opponent I is using hindsight more than 10 years after the invention to say that it would have been obvious to combine immunoassays for proteins and antibodies, which can use a soluble signal, with DNA sequence-specific probes. Such use was far from obvious since, at the time, the assays for sequence-specific nucleic acid probes were concerned with localization. This argument of combining immunoassays for proteins with nucleic acid probes was raised and dismissed in the past and lacks merit in the present oppositions.

The remaining references cited by Opponent I are secondary references, cited for specific propositions such as the use of ligand/receptor interactions in the detection of nucleic acids. None of the references, either alone or in combination with the cited primary references, disclose or suggest a detection system wherein a probe is hybridized to the

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target sequence and generates a soluble signal in a transparent, non-porous system.

3.3. Arguments for patentability to counter opposition II

3.3.1. Objections under Article 100(c) EPC

3.3.1.1. Opponent II argues that the terms "non-porous system" or "non-porous substrate" are not literally disclosed and that there is no explanation in the papers as originally filed or in the patent specification what is to be understood by these terms.

First of all, with respect to this definition there appears to be a misunderstanding. The terms "system" and "substrate" are not the same or interchangeable. The same is true for the terms "system" and "support". As set forth in claim 1, the support comprises or is contained within a system. The disclosure indicates that the support may be porous (such as nitrocellulose) or non-porous (such as glass), but the system must be non-porous.

Furthermore, it is not necessary for a term to be literally disclosed in the application as filed, rather an amendment should be regarded as introducing new matter only "if the overall change in the content of the application .... results in the skilled person being presented with information which is not directly and unambiguously derivable from that previously presented by the application, even when account is taken of matter which is implicit to a person skilled in the art in what has been expressly mentioned." (Guidelines C VI. 5.4.). However, the

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non-porous property of the system is self-evident from the disclosure and clearly derivable for a person skilled in the art. The claimed method requires the generation of a soluble signal. Accordingly, by necessity, this requires the presence of a solution which, in turn, requires a container or system that is non-porous. In some embodiments of the invention, the support is porous, such as nitrocellulose, and must therefore be contained in a non-porous system. In other embodiments the support may be the system, in which case the support is non-porous and contains the solution in which the soluble signal is generated.

3.3.1.2. Opponent II furthermore argues that the claim limitation of "soluble signal" is not sufficiently disclosed in the original application. This objection has already been raised during the examination proceedings and has been successfully overcome by applicants line of argument and has been resolved to the Examiner's satisfaction. In the following the arguments set forth during substantive examination and found persuasive by the Examiner are repeated. The feature "soluble signal" can be derived, e.g. from the disclosure on page 21, lines 9 to 26 where spectrophotometric and ELISA techniques are discussed as preferred practices of the invention. It is known in the art that techniques, such as spectrophotometric-based and ELISA techniques are premised upon the use of a solution. It is further disclosed on page 53, lines 1 to 3 where it is stated that "the enzyme reaction was terminated by adding 1.0 ml of 0.5% sodium bicarbonate and absorbance was determined at A_{300}." Absorbance of a substrate can only be measured in solution. This line of argument is

still valid and has not been refuted by Opponent II. We also refer to our earlier remarks regarding Opponent's I challenge of priority.

3.3.1.3. Opponent II further alleges that claim 1 violates Article 100(c) EPC by omitting steps which are originally disclosed. We do not think that this objection is justified. According to the EPC and the jurisdiction of the EPO, a claim must clearly define the object of the invention, i.e. indicate all the essential features of it. This, however, does not mean that a reference to a specific passage of the original disclosure necessitates the incorporation of all features mentioned there into the claims as long as the above requirement is fulfilled, which is the case here, as all essential features of the invention are set forth in claim 1.

3.3.3. Objection under Article 100(b) EPC

Opponent II alleges that the contested patent does not disclose the invention in a manner sufficiently clear and complete for those skilled in the art to carry it out, and refers to the decision T 409/91 which allegedly states that the requirements of Article 83 EPC will be satisfied only if the skilled person is able to carry out the invention within the entire scope claimed. However, this decision is not relevant to the present case. It concerns a completely different field and the question discussed therein does not apply to the present case, although Opponent II has tried to fabricate a relationship. He points out that the application contains hardly any example or no examples at all with respect to eukaryotic cells. First of all, examples are not

an absolute requirement as Rule 27 EPC states that the description should contain examples "where appropriate". Furthermore, according to established case law an invention is considered to be sufficiently disclosed if at least one way is clearly indicated enabling the person skilled in the art to carry it out (see, e.g., T 292/85, this view has been confirmed by similar statements in later decisions). Based on a calculation with reference to the lambda genome, Opponent II alleges that it is not possible to detect specific polynucleotide sequences in eukaryotic cells according to the claimed method.

The argument is besides the point. Opponent II is apparently arguing that one cannot detect a specific sequence in a eukaryotic cell by the claimed method because the sequence is in too low of a concentration and too much of the target DNA would have to be bound to the support.

Opponent's II underlying assumptions, however, are fatally flawed. In his calculations, Opponent II assumes there is one probe per sequence and one enzyme (signalling moiety) per probe. Conveniently, Opponent II ignores the fact that one can easily use more than one enzyme per probe and/or more than one probe per sequence. In other words, if the target sequence is in low concentration, the measure to be taken would be to increase the number of probes directed at the target sequence in order to detect it, instead of increasing the amount of target. Alternatively, one can also increase the number of enzymes or signalling moieties per probe to increase the signal. Moreover, Opponent II uses a full genome in its calculations when in actuality one would

not search an entire genome, but rather fragments thereof. The patent discloses the use of sandwich assays, which when used with fragments of the DNA, can concentrate the sequence of interest by extracting and separating out those fragments containing the sequence of interest. Using this procedure or the one outlined above, the claimed method can easily be used on nucleic acids from eukaryotic cells.

3.3.4. Objections under Article 100 (a) EPC

Opponent II alleges that the subject matter of the contested patent is not patentable in view of the cited prior art, and additionally argues that the features "soluble signal" and "non-porous system" cannot be used to substantiate the required novelty or to substantiate inventive step. However, as explained herein, these limitations are properly supported by the disclosure and, thus are proper claim limitations which are available to distinguish the prior art.

Reference D1 cited by Opponent II is David Ward's European Patent EP Patent No. 63,879, discussed hereinabove as Opponent's I reference O7. Reference D3 is Opponent's I reference O1 discussed hereinabove. Reference D2 was raised and thoroughly considered, together with references D1 and D3, during prosecution of the present application. Opponent II is simply requesting reconsideration of the same prior art and arguments considered by the Examiner during prosecution. We therefore refer to the line of argument presented during the examination proceedings with

respect to D2, when it was expressly stated that, in contrast to the subject matter of the contested patent, D2 teaches the use of two different probes complementary to different portions of a gene sequence with each probe being labelled at the end which will abut the other probe upon hybridization. The first probe is labelled with a chemiluminescent complex that emits light of a specific wavelength measurable by spectrophotometry when excited by the proximity of the first signalling moiety. Further, according to D2 each probe by itself is incapable of generating a signal as contrasted with the instant invention which has no such limitation. In fact D2 discloses the generation of a signal through an energy transfer system between the two probes, which is a completely different method from the instant invention, which teaches a method of detection in which target and probe nucleic acids are bound to a solid matrix contained within a transparent or translucent system and a soluble signal, which can be detected spectrophotometrically, is generated thereby.

Reference D4, like the other references cited by Opponents I and II, is concerned with the localization of specific DNA sequences as Opponent II readily admits in its opposition. As discussed above, such localization techniques require an <u>insoluble</u> signal, as clearly indicated by the figures in the article.

Opponent II also cites reference D5, a reference considered during prosecution of the U.S. application and found not to be a bar to patentability. D5 describes a method of hybridization, in which the analyte is in

solution. The unhybridized probe and the unbound signalling moiety have to be removed by cumbersome procedures such as by centrifugation or by use of gels, before detection of the label (see page 3, lines 5-10). In the claimed method of the contested patent, a simple rinsing step is all that is necessary to remove the free probe and signalling moiety. This is a significant improvement and an unexpected advantage over the method of D5, both in terms of efficiency and in yielding a more accurate quantitative determination as a result of dispensing with the involved separation techniques of D5, where non-specific loss of reactants is unavoidable.

More importantly, a solid support is not used in the procedure of D5, and accordingly, the reference does not disclose a method which meets the limitations of the claims of the contested patent.

Reference D6 is a secondary reference cited for the proposition that chemiluminescent-labeled conjugates are used in specific binding assays. The reference is not concerned with, nor does it disclose, a detection method as claimed in the present patent wherein a probe hybridizes to the target sequence and carries a signalling moiety which generates a soluble signal in a transparent or translucent, non-porous system.

4. Summary

In summary, none of the cited documents teaches or suggests the claimed subject matter. Furthermore, the present invention is sufficiently disclosed.

5. Requests

In view of the above, it is requested that the oppositions be rejected and the present patent be maintained in full.

Renate Barth

Dr. Renate Barth
European Patent Attorney

1 copy each for the Opponents