EPA/EPO/OEB
D-80298 München
+49 89 2399-0
TX 523 656 epmu d
FAX +49 89 2399-4465

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

4

COPY

VOSSIUS & PARTNER
Postfach 86 07 67
81634 München
ALLEMAGNE

Datum/Date
27.07.00

Zeichen/Ref./Réf.	Anmeldung Nr./Application No./Demande n°./Patent Nr./Patent No./Brevet n°.
S 808 EP/I	92114727.8 0525821

Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire
ENZO BIOCHEM, INC.

The appeal filed with your letter of 07.04.00 & 07.06.00 against the decision of the Examining Division of the European Patent Office of 28.01.00 has been referred to the Technical Board of Appeal 334

The reference number of the appeal file is T0749/00-334
You are asked to quote that reference in any further communication submitted on this appeal and to address such communication to Directorate General 3 (Appeals) of the European Patent Office in Munich.

A.

Registry
Tel.(089)2399-

VOSSIUS & PARTNER
Patentanwälte

Vossius & Partner POB 86 07 67 81634 München Germany

To the
European Patent Office
Munich

PATENTANWÄLTE
EUROPEAN PATENT ATTORNEYS
EUROPEAN TRADEMARK ATTORNEYS
Dr. VOLKER VOSSIUS, Dipl.-Chem.
(bis 1992; danach in anderer Kanzlei)

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.
AXEL STELLBRINK, Dipl.-Ing.
Dr. JOACHIM WACHENFELD, (Biol.)
Dr. FRIEDERIKE STOLZENBURG, Dipl.-Biol.
RAINER VIKTOR, Dipl.-Ing.

EUROPEAN PATENT ATTORNEYS
Dr. RENATE BARTH, Dipl.-Chem.
Dr. URSULA ENGLBRECHT, Dipl.-Chem.

RECHTSANWÄLTE
HELGA TREMMEL
BARBARA GUGGENMOS, Dipl.-Chem.
DR. THURE SCHUBERT

SIEBERTSTRASSE 4
81675 MÜNCHEN
GERMANY
TEL.: +49-89-41 30 40
FAX: +49-89-41 30 41 11 (G3/G4)
+49-89-41 30 44 00 (G3)
(Marken - Trademarks)
E-MAIL: info@vossiusandpartner.com
HOMEPAGE: www.vossiusandpartner.com

EP 92 11 4727.8-2116
ENZO BIOCHEM, INC.
Our Ref.: S 808 EP/I

June 7, 2000
Ba/ne

In the following the Grounds of the Appeal dated April 7, 2000, are set out:

In their Decision dated January 28, 2000, the Examining Division stated that the Auxiliary Request did not meet the requirements of the EPC due to lack of inventive step.

Applicant disagrees for the following reasons:

1. KNOWLEDGE OF THE PERSON SKILLED IN THE ART AT THE PRIORITY DATE

The present invention has been filed some time ago, i.e. its priority date is in the year 1983. It concerns a field wherein the knowledge has increased immensely in the meantime. In such a case it is especially important to differentiate

between what was really known at that time and what may be interpreted into the teaching of the prior art by hindsight on the basis of the present knowledge.

2. CASE LAW

When asserting inventive step certain standards have to be applied based on decisions of the Technical Boards of Appeal. According to T2/83 ("Simethicone Tablet/RIDER") the question is not whether the skilled could have done something, i.e. could have applied a known teaching, but whether he would have applied the teaching in expectation of some improvement or advantage. It is further stated that a patentable subject matter may exist in spite of the fact that the claimed solution is retrospectively trivial and in itself obvious. A similar statement is made in T60/89 ("Fusion Proteins/HARVARD") where the key question raised is whether it was obvious for a skilled person to try the idea outlined with a reasonable expectation of success.

3. PROBLEM AND SOLUTION OF THE PRESENT INVENTION

3.1 If one takes document D1 as the closest prior art, the **problem** to be solved is the provision of a method for detecting a polynucleotide sequence which allows the quantitative determination (page 21, lines 18 to 21) and which consequently permits easy automation and instrumentation of the detection of a signal associated with the presence and/or quantity of the target polynucleotide sequence.

The **solution** provided by the invention is a method for detecting a polynucleotide sequence by performing the steps as described whereby a quantifiable signal is generated upon hybridization of the probe with the

sequence. The signal provides means to quantify the target polynucleotide by the techniques indicated in claim 1, especially photometric techniques.

Specific embodiments are contained in the dependent claims.

The further independent claims are based on the same principle.

3.2 The method claimed is not made obvious by the prior document D1 because the combination of fixing a polynucleotide sequence, which is non-radioactively labelled, to a substrate with a quantifiable detection system, e.g. an ELISA, is not suggested.

3.2.1 At the priority date of the present application quantitative detection methods using quantifiable signals, such as enzyme-linked immunosorbent assays (ELISA) were well known and had been around for years. But these detection methods involved a labelling of an antibody, enzyme or other protein and were typically only used for the detection of antigens and/or antibodies.

3.2.2 With respect to the field of nucleic acid detection, quantitative detection techniques involving signals such as ELISA were not available in the early 1980s. Nucleic acids were detected primarily by means of Southern and Northern blotting and other in situ hybridization (see e.g. the disclosure in D1) or immunoprecipitation techniques. The present patent application taught the industry for the first time how to use quantitative detection techniques typically used in the antigen/antibody detection field for nucleic acid detection. The characteristics of nucleic acids would have discouraged and even would have predicted away from the application of colorimetic assays for the detection of nucleic acids in the claimed method. In ELISA detection based systems for antigen/antibody one merely had to deal with ligand-receptor specificity and the non-specific binding of the protein to the support. On the other hand, if

colorimetic determination of nucleic acids were to be used, several problems may occur, i.e.

- it would require a higher capacity of the matrix for the nucleic acid which is a linear molecule (ligands and proteins are three-dimensional);

- it would require immobilization in a single-stranded form, thus necessitating nucleic acid melting and re-hybridization; and

- besides the desired specific binding, there can be more non-specific interactions, e.g. between protein and nucleic acid, protein and matrix, nucleic acid and matrix and ligand and nucleic acid.

At the time the present invention was made, one could not have conceived that these interactions could be effectively dealt with and that the claimed method would provide the desired result.

3.2.3 With regard to the feature "quantifiable", it was argued by the Examining Division that according to D1 the probe can be enzymatically or fluorescently labelled whereby both kinds of labels give rise to a quantifiable signal and that the signal is quantifiable, independent of whether it is actually quantified or not. Although this may be theoretically the case, it is a fact that in D1 the signal has not been used for quantification.

The focus of D1 is on insoluble coloured precipitates and direct light microscopic visualization which elements are opposed to and actually teach away from the present invention and the notion of a quantifiable signal.

D1 is limited to in situ hybridization which can only be practised in the context of well-defined morphology against which a localized signal must be produced and interpreted. When performing in situ hybridization, the technician or researcher is looking under the microscope and observing form or morphology as well as signalling events within the context of any such form or morphology.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.