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Datasheet for the decision of 11 September 2019

Case Number: T 0385/14 - 3.3.08

Application Number: 05740642.3

Publication Number: 1745144

IPC: C12N5/0735

Language of the proceedings: EN

Title of invention:
ASSAY FOR DRUG DISCOVERY BASED ON IN VITRO DIFFERENTIATED CELLS

Patent Proprietor:
AXIOGENESIS AG

Opponent:
GE Healthcare UK Limited

Headword:
In vitro differentiated cardiomyocytes/AXIOGENESIS

Relevant legal provisions:
EPC Art. 53(a), 100(a), 111(1)
EPC R. 28(c)

Keyword:
Decision under appeal set aside
Remittal of the case to the opposition division for further prosecution

Decisions cited:
G 0002/06, T 1176/09, T 2221/10

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0385/14 - 3.3.08

D E C I S I O N
of Technical Board of Appeal 3.3.08
of 11 September 2019

Appellant: (Patent Proprietor)	AXIOGENESIS AG Nattermannallee 1, Gebäude S20 50829 Köln (DE)
Representative:	Steinecke, Peter Müller Fottner Steinecke Rechtsanwalts- und Patentanwaltspartnerschaft mbB Römerstraße 16 b 52428 Jülich (DE)
Respondent: (Opponent)	GE Healthcare UK Limited Amersham Place Little Chalfont Buckinghamshire HP7 9NA (GB)
Representative:	Bryan, Ian Bennett GE Healthcare Limited Pollards Wood Nightingales Lane Chalfont St Giles, Buckinghamshire HP8 4SP (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 19 December 2013 concerning maintenance of the European Patent No. 1745144 in amended form.**

Composition of the Board:

Chairman	B. Stolz
Members:	M. R. Vega Laso
	J. Geschwind

Summary of Facts and Submissions

I. European patent No. 1 745 144 with the title "Assay for drug discovery based on in vitro differentiated cells" was granted on the European application No. 05740642.3 which had been filed under the Patent Cooperation Treaty (PCT) on 11 May 2005 claiming a priority of 11 May 2004.

II. Claim 1 of the patent as granted reads as follows:

"1. A method for identifying and/or obtaining a drug for the amelioration or treatment of a heart disease or for determining the toxicity of a compound comprising:

(a) contacting a test sample comprising an in vitro differentiated cell with a test substance to be screened, wherein said cell is induced to display a predefined diseased phenotype which substantially corresponds to a phenotype of a cell of a diseased cell, tissue or organ; and
(b) determining a responsive change of the phenotype in said test sample, wherein a responsive change

(i) preventing or delaying the onset or the progression of the diseased phenotype is indicative for a useful drug; and
(ii) enhancing the onset or progression the diseased phenotype is indicative for the toxicity of the compound;

wherein said in vitro differentiated cell is a cardiomyocyte and said phenotype is a cardiac hypertrophic phenotype."

Dependent claims 2 to 25 are directed to various embodiments of the method of claim 1. Independent claims 26 and 27 concern, respectively, the use of a kit or composition for conducting the method of claims 1 to 25, and the use of an apparatus in the claimed method for "analysing a parameter of the phenotype". Independent claim 28 is directed to the use of an *in vitro* differentiated cell which is induced to display a predefined disease phenotype in accordance with the claimed method for target validation, drug discovery or pharmacokinetic or pharmacological profiling. Claims 29 and 30 relate to a method of identifying and/or obtaining a gene or gene product involved in a disease as a drug target, in which method an *in vitro* differentiated cell as defined in claims 1 to 21 is expressed. Finally, claim 31 concerns a method of validating a potential drug target, in which the expression of a target gene and/or activity of the target gene product in an *in vitro* differentiated cell as defined in claims 1 to 21 is altered.

III. The patent was opposed on the grounds for opposition of Article 100(a) in connection with Articles 54 and 56, and 100(b) EPC. During the opposition proceedings, the opposition division raised *ex officio* an issue under Article 100(a) in conjunction with Article 53(a) EPC.

IV. In an interlocutory decision posted on 19 December 2013, the opposition division found that the patent could not be maintained as granted (main request) because the subject-matter of claims 1, 2 and 5 to 31 was excluded from patentability pursuant to Article 53(a) and Rule 28(c) EPC. However, account being taken of the amendments introduced into the claims according to the auxiliary request I and the description adapted thereto as filed during the oral

proceedings, the patent and the invention to which it relates were found to meet the requirements of the EPC. Claim 1 of the auxiliary request I differed from the corresponding claim of the patent as granted in that it included the negative feature "*... provided that the cell is not derived from a human embryonic stem cell*".

V. Each the patent proprietor (appellant) and the opponent filed an appeal against the interlocutory decision. The opponent withdrew its appeal by letter dated 5 January 2017. Hence, in appeal proceedings its procedural status is that of a respondent.

VI. The appellant submitted a statement of grounds of appeal together with two new auxiliary requests. Together with its statement of grounds of appeal, the present respondent (opponent) filed new evidence. Both the appellant and the respondent requested oral proceedings as a subsidiary request.

VII. Each party replied to the statement of grounds of appeal of the other party.

VIII. Pursuant to their request, the parties were summoned to oral proceedings before the board. In a communication sent in preparation of the oral proceedings, the board expressed its provisional opinion on various procedural and substantive issues relevant to the case.

IX. Both parties informed the board that they would not attend the scheduled oral proceedings. The appellant withdrew also its request for oral proceedings.

X. Oral proceedings were held on 11 September 2019 in the absence of the parties.

XI. The submissions made by the appellant concerning issues relevant to this decision, were essentially as follows:

Articles 100(a) and 53(a) and Rule 28(c) EPC

The assessment of the claims and the description of the patent at issue *vis-à-vis* the principles set out in decision G 2/06 (OJ EPO 2009, 306) made by the opposition division in the decision under appeal was not correct. Although in the method as claimed in the patent *in vitro* differentiated cells derived from pluri- or multipotent cells were used, the method was not concerned with the use of a human embryo or directed otherwise to a product which at the filing date could be prepared exclusively by a method which necessarily involved the destruction of a human embryo. Neither paragraph [0023] nor paragraph [0104] of the patent specification referred to human embryonic stem cells. Even though reference was made to human embryonic stem cell lines in paragraphs [0066], [0068] and [0146], the claims did not refer to such cell lines which were not required for putting the invention into practice. Reference to human embryonic stem cell lines in the description, if at all, could be assessed only with respect to enablement. The mere possibility that the claimed invention could be implemented with human embryonic stem cells was no reason for an objection under Article 53(a) EPC. The situation in the present case was different from that in decisions T 2221/10 of 4 February 2014 and T 1176/09 of 16 October 2012, in which the claimed invention related solely to human embryonic stem cells and their use.

XII. The respondent did not make any submissions concerning the findings on Articles 100(a) and 53(a) EPC in the decision under appeal.

XIII. The appellant (patent proprietor) requested in writing that the decision under appeal be set aside and the patent be maintained as granted (main request) or on the basis of the claims of auxiliary request I or II filed together with the statement of grounds of appeal.

XIV. The respondent (opponent) requested in writing that the appeal be dismissed.

Reasons for the Decision

Main request (claims as granted) – Articles 100(a) and 53(a) EPC and Rule 28(1)(c) EPC

1. In the decision under appeal, the opposition division, referring to decision G 2/06 of the Enlarged Board of Appeal (OJ EPO 2009, 306) and the Guidelines for Examination in the EPO, Part G, Chapter II-32.5.3(iii), found that the method of claim 1, as far as it involved the use of *in vitro* differentiated cardiomyocytes that were derived from a human embryonic stem cells, was excluded from patentability under Article 53(a) and Rule 28(c) EPC, because at the effective date such cells could be prepared exclusively by a method which necessarily involved the destruction of human embryos.

2. After the date on which the decision under appeal in the present case was taken, the European Patent Office revised the interpretation of Rule 28(c) EPC in the light of judgments C-34/10 and C-364/13 of the Court of Justice of the European Union on the interpretation of Article 6(2)(c) of the EU Directive 98/44/EC. In judgement C-364/13, the Court of Justice had ruled:

"*Article 6(2)(c) of Directive 98/44/EC of the European Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions must be interpreted as meaning that an unfertilised human ovum whose division and further development have been stimulated by parthenogenesis does not constitute a 'human embryo', within the meaning of that provision, if, in the light of current scientific knowledge, it does not, in itself, have the inherent capacity of developing into a human being, this being a matter for the national court to determine.*"

3. In view of this ruling and the fact that a protocol to derive human parthenogenetic embryonic stem cells from parthenotes (activated oocytes) was made available by the publication of a patent application under the PCT (WO 2003/046141) on 5 June 2003, the European Patent Office now considers that an objection under Article 53(a) EPC and Rule 28(1)(c) EPC as entered into force on 1 July 2017 (formerly Rule 28(c) EPC) cannot be raised in respect of an application pertaining to human pluripotent stem cells, including human embryonic stem cells, uses thereof or products derived therefrom if (i) the application has an effective date (i.e. a valid priority date or, if no priority is claimed or the priority is not valid, a filing date) on or after 5 June 2003, and (ii) its technical teaching can be put into practice using human embryonic stem cells derived from parthenogenetically activated human oocytes.

4. The board sees no reason, in the context of the present case, to question the revised interpretation of Rule 28(1)(c) EPC (formerly Rule 28(c) EPC) by the European Patent Office. The revised interpretation applies to the patent at issue. The patent was granted

on a European application filed on 11 May 2005, claiming the priority of a previous application filed on 11 May 2004. There is no evidence on file showing that the cardiomyocytes required for carrying out the method of claim 1 cannot be obtained by *in vitro* differentiation of human embryonic stem cells derived from parthenogenetically activated human oocytes. Hence, contrary to the finding in the decision under appeal, it cannot be asserted that, at the effective date, putting into practice the invention to which the patent relates necessarily involved the destruction of human embryos.

5. Consequently, the method of claim 1 cannot be regarded as excluded from patentability under Article 53(a) EPC.

Remittal for further prosecution (Article 111(1) EPC)

6. In the decision under appeal, the grounds for opposition of Article 100(a) in connection with Articles 54 and 56, and 100(b) EPC were not examined in connection with the claims as granted. The board exercises the discretion conferred by Article 111(1) EPC to remit the case to the opposition division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the opposition division for further prosecution on the basis of claims 1 to 31 as granted.

The Registrar: The Chairman:

L. Malécot-Grob B. Stolz

Decision electronically authenticated