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(54) **Method for determining the success rate of treatment of multiple sclerosis**

(57) The invention relates to a method for following the progress and/or treatment of multiple sclerosis on the basis of at least one biological sample obtained from a person suffering from, or suspected to suffer from, multiple sclerosis, said method comprising the steps of:

- a) providing a biological sample derived from a patient suffering from, or suspected to suffer from, multiple sclerosis;
- b) determining the amount of at least one of the cytokines from the group consisting of IL-18, IL-12p40, IFN- $\gamma$ , IL-4, IL-10, TGF- $\beta$ , IL-12R $\beta$ 1, IL-12R $\beta$ 2 and/or IL-12p35 of said first biological sample; and optionally
- c) comparing for one or more of the cytokines de-

termined in step b) the value(s) obtained in step b) with a reference value.

The invention allows determination of the success rate of treatment of multiple sclerosis by discriminating between patients with multiple sclerosis. In particular, a distinction can be made between relapsing remitting multiple sclerosis, secondary progressive multiple sclerosis and primary progressive multiple sclerosis and healthy controls. More particularly the invention allows determination of the success rate of treatment of multiple sclerosis with interferon-beta (IFN- $\beta$ ) species such as IFN- $\beta$ 1b and IFN- $\beta$ 1a.

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EUROPEAN SEARCH REPORT

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EP 00 20 3765

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	NICOLETTI F ET AL: "Blood levels of transformig growth factor-beta 1 (TGF-BETA1) are elevated in both relapsing remitting and chronic progressive multiple sclerosis (MS) patients and are further augmented by treatment with interferon-beta 1B (IFN-beta1B)" CLINICAL AND EXPERIMENTAL IMMUNOLOGY, vol. 113, no. 1, July 1998 (1998-07), pages 96-99, XP001000615	1,2,5-7, 17, 20-22, 32,33, 44-49	G01N33/53
Y	abstract * page 96 - page 98; figure 1; table 1 *	1-49	
Y	OZENCI V. ET AL: "Multiple sclerosis: levels of interleukin-10-secreting blood mononuclear cells are low in untreated patients but augmented during interferon-beta-1B treatment" SCANDINAVIAN JOURNAL OF IMMUNOLOGY, vol. 49, no. 5, May 1999 (1999-05), pages 554-561, XP001000606 abstract * page 555 - page 558 *	1,2,32, 35,36, 42,45, 48,49	
X	VAN OOSTEN B W ET AL: "A pilot study investigating the effects of orally administered pentoxifylline on selected immune variables in patients with multiple sclerosis" JOURNAL OF NEUROIMMUNOLOGY, vol. 66, no. 1-2, 1996, pages 49-55, XP001000607	1,35,42	
Y	* page 51 - page 52 * --- -/--	32-42	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G01N
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 19 June 2001	Examiner Moreno de Vega, C
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

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Application Number  
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DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)	
X	VAN BOXEL-DEZAIRE ET AL: "Decreased interleukin-10 and increased interleukin-12p40 mRNA are associated with disease activity and characterize different disease stages in multiple sclerosis" ANNUALS OF NEUROLOGY, vol. 45, no. 6, June 1999 (1999-06), pages 695-703, XP001000609	1		
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X	VAN BOXEL-DEZAIRE ET AL: "Expression of cytokine mRNA in relation to clinical disease parameters in MS patients" JOURNAL OF NEUROIMMUNOLOGY, vol. 90, no. 1, 1 September 1998 (1998-09-01), page 78 XP001000608	1		
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X	DURELLI ET AL: "Chronic alfa interferon (IFNA) treatment for multiple sclerosis (MS) modulates cytokine production rather than antigen presentation process" NEUROLOGY, vol. 45, no. 4, 1995, page A234 XP001000612	1, 32, 33		TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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A,D	NAVIKAS: "Review: Cytokines and the pathogenesis of multiple sclerosis" J.NEUROSCI. RES., no. 45, 1996, pages 322-333, XP001000378 * the whole document *	1-49		
The present search report has been drawn up for all claims				
Place of search <b>MUNICH</b>		Date of completion of the search <b>19 June 2001</b>	Examiner <b>Moreno de Vega, C</b>	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

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专利名称(译)	确定多发性硬化症治疗成功率的方法		
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其他公开文献	EP1114998A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

本发明涉及一种基于从患有或怀疑患有或多发性硬化症的人获得的至少一种生物样品来跟踪多发性硬化的进展和/或治疗的方法，所述方法包括以下步骤：a) 提供源自患有或怀疑患有或多发性硬化症的患者生物样品；b) 确定至少一种细胞因子的量，所述细胞因子选自IL-18, IL-12p40, IFN-γ, IL-4, IL-10, TGF-β, IL-12Rβ1, IL-12Rβ2和/或所述第一生物样品的IL-12p35;和任选地c) 将步骤b) 中测定的一种或多种细胞因子与步骤b) 中获得的值与参考值进行比较。本发明允许通过区分患有或多发性硬化症的患者来确定多发性硬化症的治疗成功率。特别地，可以区分复发缓解型多发性硬化，继发性进行性多发性硬化和原发性进行性多发性硬化和健康对照。更具体地，本发明允许确定用干扰素-β ( IFN-β ) 物种如IFN-β1b和IFN-β1a治疗多发性硬化的成功率。

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claims	CLASSIFICATION OF THE APPLICATION (Int. Cl. 7)
X	NICOLETTI F ET AL: "Blood levels of transforming growth factor-beta 1 (TGF-BETA1) are elevated in both relapsing remitting and chronic progressive multiple sclerosis (MS) patients and are further augmented by treatment with interferon-beta 1B (IFN-beta1B)". CLINICAL AND EXPERIMENTAL IMMUNOLOGY, vol 113, no 1, July 1998 (1998-07), pages 96-99, XP001000615 abstract * page 96 - page 98; figure 1; table 1 *	1, 2, 5-7, 20-22, 32, 33, 44-49	G01N33/53
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Y		32-42	

The present search report has been drawn up for all claims.

Date of search: 19 June 2001 Examiner: Moreno de Vega, C

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