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(72) Inventor; and

(71) Applicant : LORD, Graham [GB/GB]; 4 Sussex House,
86 Raymond Road, Wimbledon, London SW19 4AH (GB).

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(57) Abstract: Methods of treating various conditions using miR-142, miR-142 mimics, and antagonists of miR-142 are provided.

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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|------------------------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | ZHOU QIHUI ET AL: "miR142-3p Interfers with T Cell Proliferation by Targeting the Expression of Garp in Patients with Rheumatoid Arthritis", ARTHRITIS & RHEUMATISM, vol. 64, no. 10, Suppl. S, October 2012 (2012-10), pages S1058-S1059, XP002729082, & ANNUAL SCIENTIFIC MEETING OF THE AMERICAN-COLLEGE-OF-RHEUMATOLOGY (ACR) AND ASSOCIATION-OF-RHEUMATOL; WASHINGTON, DC, USA; NOVEMBER 09 -14, 2012 the whole document | 1-51 |
| X | ----- BO HUANG ET AL: "miR-142-3p restricts cAMP production in CD4(+)CD25(-) T cells and CD4(+)CD25(+) T-REG cells by targeting AC9 mRNA", EMBO REPORTS, NATURE PUBLISHING GROUP, LONDON, GB, vol. 10, no. 2, 19 December 2008 (2008-12-19), pages 180-185, XP002679659, ISSN: 1469-221X, DOI: 10.1038/EMBOR.2008.224 [retrieved on 2008-12-19] the whole document | 3-15, 17-45, 47,48, 50,51 |
| X | ----- SHU DING ET AL: "Decreased microRNA-142-3p/5p expression causes CD4+ T cell activation and B cell hyperstimulation in systemic lupus erythematosus", ARTHRITIS & RHEUMATISM, vol. 64, no. 9, 27 August 2012 (2012-08-27), pages 2953-2963, XP055137316, ISSN: 0004-3591, DOI: 10.1002/art.34505 the whole document | 1-51 |
| X | ----- M LV ET AL: "An oncogenic role of miR-142-3p in human T-cell acute lymphoblastic leukemia (T-ALL) by targeting glucocorticoid receptor-[alpha] and cAMP/PKA pathways", LEUKEMIA, vol. 26, no. 4, 7 October 2011 (2011-10-07), pages 769-777, XP055137323, ISSN: 0887-6924, DOI: 10.1038/leu.2011.273 the whole document | 3-15, 17-45, 47,48, 50,51 |
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INTERNATIONAL SEARCH REPORT

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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|-----------|--|--|
| X,P | <p>NADA SONDA ET AL: "miR-142-3p Prevents Macrophage Differentiation during Cancer-Induced Myelopoiesis", IMMUNITY, vol. 38, no. 6, 27 June 2013 (2013-06-27), pages 1236-1249, XP055137309, ISSN: 1074-7613, DOI: 10.1016/j.immuni.2013.06.004 the whole document</p> <p align="center">-----</p> | <p>3-15, 17-45, 47,48, 50,51</p> |

INTERNATIONAL SEARCH REPORT

Information on patent family members

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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|--|--|
| WO 2012065027 A2 | 18-05-2012 | EP 2638159 A2 US 2013236437 A1 WO 2012065027 A2 | 18-09-2013 12-09-2013 18-05-2012 |
| ----- | | | |
| WO 2012096573 A1 | 19-07-2012 | AU 2012205878 A1 CA 2824324 A1 EP 2474617 A1 EP 2663641 A1 JP 2014503553 A US 2014005251 A1 WO 2012096573 A1 | 25-07-2013 19-07-2012 11-07-2012 20-11-2013 13-02-2014 02-01-2014 19-07-2012 |
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