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(71) Applicant (for all designated States except US): **SAMI LABS LIMITED** [IN/IN]; 19/1 & 19/2 I Main II Phase, Peenya Industrial Estate/Area, Bangalore 560058 (IN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MAJEED, Muhammed** [US/US]; Sabinsa Corporation, 20 Lake Drive, East Windsor, NJ 08520 (US). **NAGABHUSHANAM, Kalyanam** [US/US]; Sabinsa Corporation, 20 Lake Drive, East Windsor, NJ 08520 (US). **PANDEY, Anjali** [IN/IN]; Sami Labs Limited, 19/1 & 19/2 I Main II Phase, Peenya Industrial Estate/Area, Bangalore 560058 (IN). **RANGANATH, Shivakumar** [IN/IN]; Sami Labs Limited, 19/1 & 19/2 I Main II Phase, Peenya Industrial Estate/Area, Bangalore 560058 (IN).

(74) Common Representative: **NAGABHUSHANAM, Kalyanam**; Sabinsa Corporation, 20 Lake Drive, East Windsor, NJ 08520 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: REGULATION OF IMMUNE RESPONSE BY COLOCYNTHIN AND/OR ITS DERIVATIVES

(57) Abstract: The present invention relates to a method of inhibiting pro-inflammatory and T-cell mediated cytokines, said method comprising step of administering to a subject in need thereof a therapeutically effective amount of colocynthin and/or its derivatives. The invention also relates to a method of inhibiting T-cell surface markers and to a method of regulating immune response by colocynthin and/or its derivatives.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 11/49696

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61K 39/00 (2012.01)

USPC - 424/184.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
UCPS-424/184.1Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC-424/184.1, 185.1, 248.1Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST, Google, Google Scholar, WIPO, Thomson Innovation, PUBMED, Cytokines, anti-inflammatory, pro-inflammatory, T-cell mediated, TNF, IL, INF, citrullus colocynthis, colocynthus, colocynthes, bitter guard, wild gourd, CD4, CD8, interleukin, interferon

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Marzouk et al. 'Screening of analgesic and anti-inflammatory activities of Citrullus colocynthis from southern Tunisia Journal of Ethnopharmacology Volume 128, Issue 1, 2 March 2010, Pages 15-19 entire document esp. abstract, p. 17, para 6 to p. 19, para 1, 2 and 3	1-2, 6
A	US 2008/0166435 A1 (Pylypchuk) 10 July 2008 (10.07.2008)	4-5
A	US 7,431,948 B2 (Tripp et al) 07 October 2008 (07.10.2008)	1-3, 6
A	WO 2005/030232 A2 (Ayare) 07 April 2005 (07.04.2005)	4-5
A	WO 2007/116404 A2 (Tannin et al.) 18 October 2007 (18.10.2007)	4-5
A	Adams et al., 'Medicinal herb for the treatment of rheumatic disorders-A survey of European herbals from the 16th and 17th century', J. Ethnopharmacology 121 (2009), 343-359	1-6
A	Bendjeddou et al. 'Immunostimulating activity of the hot water-soluble polysaccharide extracts of Anacyclus pyrethrum, alpina galanga and citrullus colocynthis'. J. Ethnopharmacol. 88:155-160 (2003).	1-6

☒ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

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03 August 2012 (03.08.2012)

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Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

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Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300

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International application No.
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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.
A	Agarwal et al. Immunomodulators: A review of studies on Indian Medicinal Plants and Synthetic Peptides, Part 1: Medicinal Plants, PINSA B65 No. 3 & 4, pp.179-204 (1999)	1-6
P, X	U-pratya et al. Immunosuppressive effects of Cucubitaicin B on human peripheral blood lymphocytes, Journal of Medicinal Plants Research Vol. 4 (22), pp. 2340-2347, (18 November 2010)	1-6
P, X	Sanadgol, et al. A study of the inhibitory effects of Citrullus colocynthis (CCT) using hydro-alcoholic extract on the expression of cytokines:TNF-alpha and IL-6 in high fat diet-fed mice towards a cure for diabetes mellitus, Journal of Pharmacognosy and Phytotherapy Vol. 3(6), pp 81-88, (July 2011)	1-6