(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 February 2011 (03.02.2011)

PCT

(10) International Publication Number
WO 2011/014587 A2

(51) **International Patent Classification**:
*A61K 31/4418* (2006.01) *A61K 31/435* (2006.01)
*A61K 31/4355* (2006.01) *A61P 27/02* (2006.01)

(21) **International Application Number**:
PCT/US2010/043598

(22) **International Filing Date**:
28 July 2010 (28.07.2010)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/230,565 31 July 2009 (31.07.2009) US

(71) **Applicant** *(for all designated States except US)*: **AMIRA PHARMACEUTICALS, INC.** [US/US]; 9535 Waples Street, Suite 100, San Diego, California 92121 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **HUTCHINSON, John Howard** [US/US]; 3435 Richmond Street, San Diego, California 92103 (US). **SEIDERS, Thomas, Jon** [US/US]; 5257 Soledad Mountain Road, San Diego, California 92109 (US). **STOCK, Nicholas, Simon** [GB/US]; 7087 Camino De Grazia, No 150, San Diego, California 92111 (US).

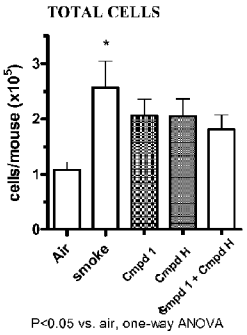
(74) **Agents**: **WILSON SONSINI GOODRICH & ROSATI** et al.; 650 Page Mill Road, Palo Alto, California 94304 (US).

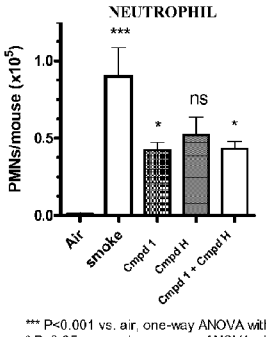
(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, 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, 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.

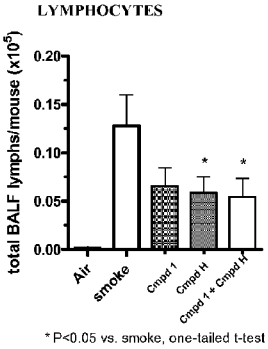
(84) **Designated States** *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK,

*[Continued on next page]*

(54) **Title**: OPHTHALMIC PHARMACEUTICAL COMPOSITIONS OF $DP_2$ RECEPTOR ANTAGONISTS




| | Plasma conc. (nM) @ trough |
|---|---|
| Compd 1 10 mg/kg, qd | < 10 |
| Compd H 30 g/kg, b.i.d. | 168 |
| Compd 1 + Compd H | <10 (2206)/136 (802) |

(57) **Abstract**: Described herein are ophthalmic pharmaceutical compositions, wherein the ophthalmic pharmaceutical compositions are in a form suitable for administration to an eye of a mammal. Ophthalmic pharmaceutical compositions disclosed herein include at least one $DP_2$ receptor antagonist compound and are used to treat or prevent ophthalmic diseases or conditions.

WO 2011/014587 A2

SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17**:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

**Published**:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*