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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 November 2011 (10.11.2011)

PCT

(10) International Publication Number
WO 2011/140524 A1

(51) International Patent Classification:
A61K 9/14 (2006.01)

(21) International Application Number:
PCT/US2011/035649

(22) International Filing Date:
6 May 2011 (06.05.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

61/332,669	7 May 2010 (07.05.2010)	US
61/358,798	25 June 2010 (25.06.2010)	US
61/413,258	12 November 2010 (12.11.2010)	US

(71) Applicant *(for all designated States except US)*: **REVALESIO CORPORATION** [US/US]; 1200 East D Street, Tacoma, Washington 98421 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **WATSON, Richard L.** [US/US]; 1985 Cougar Trail, McPherson, Kansas 67460 (US). **WOOD, Anthony B.** [US/US]; 6043 Bryan Parkway, Dallas, Texas 75206 (US). **ARCHAMBEAU, Gregory J.** [US/US]; 1824 Crystal Lane Loop S.E., Puyallup, Washington 98372 (US).

(74) Agents: **DAVISON, Barry L.** et al.; Davis Wright Tremaine LLP, 1201 Third Avenue, Suite 2200, Seattle, Washington 98101-3045 (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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

[Continued on next page]

(54) **Title**: COMPOSITIONS AND METHODS FOR ENHANCING PHYSIOLOGICAL PERFORMANCE AND RECOVERY TIME

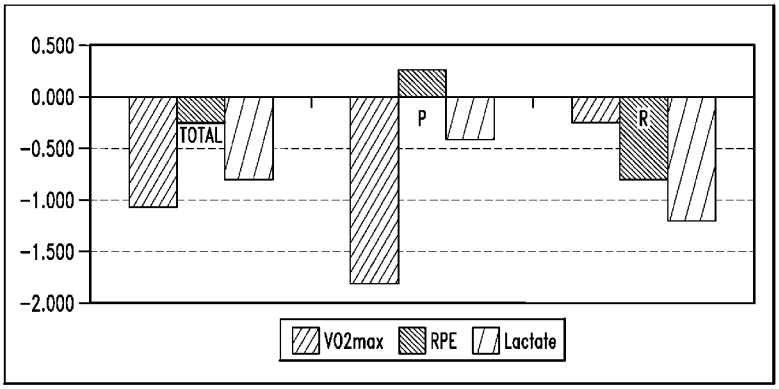


Fig. 48

(57) **Abstract**: Provided are methods for enhancing exercise (e.g., intense, eccentric, elevated temperature, repetitive, aerobic, and high altitude) performance, comprising administering electrokinetically-altered aqueous fluids comprising an ionic aqueous solution of stably configured charge-stabilized oxygen-containing nanostructures predominantly having an average diameter of less than 100 nanometers. In certain aspects, enhancing exercise performance comprises at least one of: reducing plasma inflammatory cytokines (e.g., IFN-alpha, ENA-78 and BDNF); ameliorating muscle/tendon damage or enhancing muscle/tendon recovery; reducing biomarkers of exercise-induced muscle injury (e.g., CK, plasma myoglobin); ameliorating exercise induced tendinosis, tendonitis, tenosynovitis, avulsion, and tendon strain associated with chronic repetitive movement or enhancing recovering therefrom; increasing VO2 max; decreasing RPE; reducing blood lactate; preserving muscle contractile function (e.g., maximal force, joint ROM); reducing muscle soreness; ameliorating onset of fatigue in an excercising subject. Improved methods for producing electrokinetically altered aqueous fluids (including sports beverages) are also provided.

WO 2011/140524 A1

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*