

Prospectus Supplement No. 2
(to Prospectus dated March 26, 2012)

MARSHALL EDWARDS, INC.

**Subscription Rights to Purchase Up to 17,129,361 Units
Consisting of an Aggregate of up to 8,564,680 Shares of Common Stock and
Warrants to Purchase up to 4,282,340 Shares of Common Stock at \$0.445 Per Unit**

This prospectus amends and supplements the prospectus dated March 26, 2012 (the "Prospectus"), which forms a part of our Registration Statement on Form S-1 (Registration Statement No. 333-179590). This prospectus supplement is being filed to update and supplement the information included or incorporated by reference in the prospectus with the information contained in our current report on Form 8-K, filed with the Securities and Exchange Commission on April 11, 2012 (the "Current Report"). Accordingly, we have attached the Current Report to this prospectus supplement.

The prospectus and this prospectus supplement relate to our distribution, at no charge, to holders of our common stock, \$0.0000002 par value per share (our "Common Stock"), as of 5:00 p.m., Eastern time, March 30, 2012 (the "Record Date"), of subscription rights (the "Rights"), to purchase up to 17,129,361 Units for an aggregate purchase price of up to \$7.6 million (the "Rights Offering"). Each Unit consists of 0.50 shares of Common Stock and one warrant representing the right to purchase 0.25 shares of Common Stock. In the Rights Offering, you will receive one Right for every share of Common Stock held by you of record as of the Record Date. The exercise of one Right will entitle you to purchase one Unit at a subscription price of \$0.445 per Unit, which represents the subscription price of \$0.89 per whole share of Common Stock for two Units.

Our common stock is traded on the Nasdaq Capital Market under the symbol "MSHL". Except for distributions of the Rights by a rights holder to its own stockholders, members, or general or limited partners, the Rights will not be transferable. The Rights will not trade on the Nasdaq Capital Market or any other securities exchange or trading market. On April 11, 2012, the closing price for a share of our Common Stock on the Nasdaq Capital Market was \$0.83 per share.

Investing in our Common Stock involves risks. See "Risk Factors" beginning on page 16 of the Prospectus to read about factors you should consider before you make your investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement No. 2 is April 13, 2012

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 10, 2012

Marshall Edwards, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

000-50484
(Commission
File Number)

51-0407811
(I.R.S. Employer
Identification No.)

11975 El Camino Real, Suite 101, San Diego, California 92130
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (858) 792-6300

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 8.01 Other Events.

On April 10, 2012, Marshall Edwards, Inc. (the “Company”), announced that it has received approval from the U.S Food and Drug Administration of its Investigational New Drug application for ME-344, the Company’s lead mitochondrial inhibitor. The Company is now in the process of initiating a Phase I clinical trial of intravenous ME-344 in patients with solid refractory tumors.

The Phase I clinical trial of ME-344 is being conducted in collaboration with the Sarah Cannon Research Institute. The open-label, dose-escalation trial will evaluate the safety and tolerability of intravenous ME-344 in patients with refractory solid tumors. In addition, the trial is designed to characterize its pharmacokinetic profile and describe any preliminary clinical anti-tumor activity observed. Patients will be administered intravenous infusions of ME-344 once weekly for three weeks and, after safety assessment, may continue weekly dosing if a clinical benefit is determined. The trial is expected to enroll up to 24 patients at three sites. Additional information regarding the trial, including enrollment criteria and site information, is available on the U.S. National Institutes of Health clinical trials database at www.clinicaltrials.gov.

Signature

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MARSHALL EDWARDS, INC.

By: /s/ Daniel P. Gold

Daniel P. Gold

President and Chief Executive Officer

Dated: April 11, 2012