

N/A

(Former Name or Former Address, if Changed Since Last Report)

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:

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))

Item 1.01

Entry into a Material Definitive Agreement.

The disclosure in Item 3.02 below is incorporated into this Item 1.01 by reference.

Item 3.02

Unregistered Sales of Equity Securities.

On October 29, 2010, International Isotopes Inc. (the Company), entered into a Securities Purchase Agreement (the Securities Purchase Agreement) by and among the Company, the purchasers identified on the signature pages thereto (the Purchasers) and Euro Pacific Capital, Inc. (the Lead Placement Agent) pursuant to which the Purchasers purchased 29,075,000 units (each a Unit) from the Company at a purchase price of \$0.20 per unit. Each Unit consists of (i) one share of the Company's common stock, par value \$0.01 per share (each a Share and collectively, the Shares) and (ii) a common stock purchase warrant (each a Warrant and collectively the Warrants) to purchase one share of Common Stock at an exercise price of \$0.40 per share (subject to adjustment as set forth in the Warrants). The Securities Purchase Agreement contains customary representations and warranties and other provisions.

The Warrants are immediately exercisable at a per share price of \$0.40 and have a term of five years. Each Warrant contains certain call rights of the Company if the closing price of the common stock of the Company exceeds \$0.80 for twenty consecutive Trading Days (as such term is defined in the Securities Purchase Agreement) which can be exercised pursuant to the terms of the Warrants.

In connection with the Securities Purchase Agreement, the Company and the Purchasers also entered into a registration rights agreement, dated as of October 29, 2010 (the Registration Rights Agreement), pursuant to which the Company will agree to provide certain registration rights with respect to the Shares and the underlying common stock to be issued upon exercise of the Warrants. The Company is required to file a registration statement registering the resale of all of the common stock issued and the common stock issuable upon exercise of the warrants sold to the Purchasers within 45 days from the time the Company entered into the Securities Purchase Agreement (the Initial Filing Deadline). The Company must use commercially reasonable efforts to have the registration statement declared effective by the SEC as soon as practicable but in any event within 120 calendar days after the Initial Filing Deadline, or within five business days after the date which the SEC informs the Company (A) that the SEC will not review such registration statement or (B) that the Company may request the acceleration of the effectiveness of such registration statement and the Company makes such request (subject to certain provisos in the Registration Rights Agreement). The Company is also required to make additional mandatory registrations as necessary under the Registration Rights Agreement. The Company must pay the Purchasers a monthly amount equal to 1% (not to exceed 10% in the aggregate) of the aggregate Purchase Price (as such term is defined in the Securities Purchase Agreement) paid by the Purchasers for the Registrable Securities (as such term is defined in the Registration Rights Agreement) included in

such registration statement if the registration statement is not filed, does not become effective on time, does not continue to be effective, or upon the occurrence of certain events described in the Registration Rights Agreement.

Pursuant to the Registration Rights Agreement the Company must keep each registration statement effective pursuant to Rule 415 of the Securities Act of 1933 at all times until the earlier of: (i) the date at which time the Purchasers may sell all of the Registrable Securities covered by such registration statement without restriction pursuant to Rule 144 promulgated under the Securities Act of 1993 or (ii) the date on which the Purchasers shall have sold all of the Registrable Securities covered by such registration statement. The registration rights provisions contain customary indemnification and contribution provisions.

The securities sold in the transactions discussed above were sold in reliance upon Section 4(2) of the Securities Act of 1933, as amended (the "Act ") and Regulation D thereunder. Each Purchaser represented that it was an accredited investor within the meaning of the Act and had reviewed all information about the Company necessary to make an informed investment decision.

The Securities Purchase Agreement, Warrant, and Registration Rights Agreement (collectively the Transaction Documents) have been included as exhibits hereto to provide you with information regarding their terms. The Transaction Documents contain representations and warranties made by the parties to each other. The assertions embodied in those representations and warranties are qualified by information in confidential disclosure schedules that the parties have exchanged in connection with the execution of the Transaction Documents. While the Company does not believe that the disclosure schedules contain information that it is required to disclose pursuant to applicable securities laws, other than information that has already been publicly disclosed, the disclosure schedules do contain information that modifies, qualifies and creates exceptions to the representations and warranties set forth in the attached Transaction Documents. Accordingly, you should not rely on the representations and warranties as characterizations of the actual state of facts, since they are modified in important part by the underlying disclosure schedules. Moreover, information concerning the subject matter of the representations and warranties may have changed since the date of the Transaction Documents, which subsequent information may or may not be fully reflected in the Company's public disclosures.

This brief description of the terms of the Transaction Documents is qualified by reference to the provisions of the forms of the agreements attached to this report as Exhibits 4.1, 99.1 and 99.2.

Item 8.01

Other Events

On November 1, 2010, the Company issued a press release regarding the financing described above. A copy of this press release is attached as Exhibit 99.3

Item 9.01

Financial Statements and Exhibits

(d) Exhibits

4.1

Form of Warrant.

99.1

Securities Purchase Agreement dated as of October 29, 2010.

99.2

Registration Rights Agreement dated as of October 29, 2010.

99.3

Press release dated November 1, 2010.

SIGNATURES

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.

International Isotopes, Inc.

Date: November 1, 2010

By: /s/ Steve T. Laflin
Steve T. Laflin
President and Chief Executive
Officer

EXHIBIT INDEX

**Exhibit
Number**

Description of Document

| | |
|------|-------------------------------------------------------------|
| 4.1 | Form of Warrant. |
| 99.1 | Securities Purchase Agreement dated as of October 29, 2010. |
| 99.2 | Registration Rights Agreement dated as of October 29, 2010. |
| 99.3 | Press release dated November 1, 2010. |