

Prospectus Supplement to Prospectus dated April 23, 2012

InVivo Therapeutics Holdings Corp.

26,047,200 Shares of Common Stock

This prospectus supplement updates the prospectus dated April 23, 2012 relating to the offer for sale of up to an aggregate of 26,047,200 shares of common stock of InVivo Therapeutics Holdings Corp. by the selling securityholder identified in the prospectus and this prospectus supplement, and any of their pledgees, donees, transferees or other successors in interest.

We are providing this prospectus supplement to update the table in the prospectus under the caption “Selling Securityholders” to reflect a transfer of shares and a warrant to purchase shares of common stock, from Richard Ernest to the Richard C. Ernest Revocable Trust. The amounts set forth below are based upon information provided to us by the selling securityholder (or his representatives), or on our records, and are accurate to the best of our knowledge. Unless we indicate otherwise, the information in this prospectus supplement is as of April 27, 2012.

Name	Securities Beneficially Owned Prior to the Offering		Securities Offered Hereby		Securities Beneficially Owned After this Offering	
	Common Stock (1)	Warrants	Common Stock	Common Stock Underlying Warrants	Common Stock	Warrants
Richard Ernest	N/A	N/A	N/A	N/A	N/A	N/A
Richard C. Ernest, TR UA 05/15/2009, Richard C. Ernest Revocable Trust	25,000	25,000	25,000	25,000	—	—

(1) Does not include shares of common stock underlying the warrants.

This prospectus supplement is not complete without the prospectus dated April 23, 2012, and we have not authorized anyone to deliver or use this prospectus supplement without the prospectus.

The date of this prospectus supplement is April 30, 2012.