**Exhibit 10.1**

**STOCK PURCHASE AGREEMENT**

This agreement dated as of January 8, 2010 (the “**Agreement**”) is by and between EntreMed, Inc., a Delaware corporation whose principal address is 9640 Medical Center Drive, Rockville, MD  20850, and hereinafter referred to as the “**Seller**” and \_\_\_\_\_\_\_\_\_, hereinafter referred to as the “**Buyer**.”

**WITNESSETH:**

**WHEREAS**, the Seller desires to sell three million one hundred twenty five thousand (3,125,000) shares of its common stock that are fully registered for resale (the “**Shares**”), and the Buyer desires to purchase such Shares.

**NOW, THEREFORE**, in consideration of the foregoing and the mutual promises and covenants herein contained, it is hereby agreed as follows:

On or about January 11, 2010, the Seller shall deliver to the Buyer all rights to the Shares, and it shall deliver the Shares electronically to the Buyer’s brokerage account at \_\_\_\_\_\_\_\_\_ (account number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_), and the Buyer shall concurrently pay to the Seller by bank wire the sum two million five hundred thousand dollars ($2,500,000) in lawful funds of the United States of America.

The Seller represents and warrants that the Shares (a) have been fully registered for resale under the Securities Act of 1933, as amended (the “**Act**”) and (b) have no restrictions on transferability or resale.

The Buyer represents and warrants that the Shares are being acquired for its own account and for investment purposes only, and that it is an “accredited investor” as such term is defined by Rule 501(a) of Regulation D.

(*The remainder of this page is left blank intentionally*)

**IN WITNESS WHEREOF**, the parties hereto have executed this Agreement as of the day and year first written above.

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| **ENTREMED, INC.** | |  |
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| By: |  |  |
| Name: |  |  |
| Title: |  |  |
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|  |  |  |
| **BUYER**: | |  |
|  |  |  |
| By: |  |  |
| Name: |  |  |
| Title: |  |  |