

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* Fernandes Prabhavathi (Last) (First) (Middle) 6340 QUADRANGLE DRIVE SUITE 100 (Street) CHAPEL HILL NC 27517 (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol CEMPRA, INC. [CEMP]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) President and CEO
	3. Date of Earliest Transaction (Month/Day/Year) 03/20/2012	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock							203,684	D		

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Employee Stock Option (Right to Buy)	\$7.62	03/20/2012		A		100,000		(1)	03/20/2022	Common Stock	100,000	\$0.00	100,000	D	
Employee Stock Option (Right to Buy)	\$1.43							(2)	08/08/2016	Common Stock	12,105		12,105	D	
Employee Stock Option (Right to Buy)	\$2.47							(3)	06/03/2018	Common Stock	54,273		54,273	D	
Employee Stock Option (Right to Buy)	\$2.09							(4)	08/10/2019	Common Stock	82,193		82,193	D	
Employee Stock Option (Right to Buy)	\$2.09							(5)	07/28/2020	Common Stock	34,132		34,132	D	
Employee Stock Option (Right to Buy)	\$2.09							(6)	12/08/2020	Common Stock	40,698		40,698	D	

Explanation of Responses:

1. The option vests in full on 03/20/13.
2. The option vested immediately upon its granting on 08/08/06.
3. The option vested according to the following schedule: 1/4th of the shares vest on the one-year anniversary of the 06/03/08 grant date; 1/48th of the remaining shares vest at the end of each month over the next 36 months.
4. The option vests according to the following schedule: 1/4th of the shares vest on the one-year anniversary of the 08/10/09 grant date; 1/48th of the remaining shares vest at the end of each month over the next 36 months.
5. The option vests according to the following schedule: 1/48th of the shares vest at the end of each month over 48 months, beginning 30 days after 04/26/10.
6. The option vests according to the following schedule: 1/48th of the shares vest at the end of each month over 48 months, beginning 30 days after 12/08/10.

Remarks:

/s/ Alexander M. Donaldson, 03/22/2012
by Power of Attorney

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.