

CARDIOGENESIS CORP /CA  
Form SC 13G/A  
February 10, 2005

SECURITIES AND EXCHANGE  
COMMISSION  
Washington, D.C. 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934  
Amendment No. | 4 |

CardioGenesis Corporation  
(Name of Issuer)

Common Shares  
(Title of Class of Securities)

14159W-10-9  
(CUSIP Number)

December 31, 2004  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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CUSIP No. 14159W-10-9

13G

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1. NAME OF REPORTING PERSON  
S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSON

Perkins Capital Management, Inc. 14-1501962

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2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP\*

(a)

(b)

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3. SEC USE ONLY

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4. CITIZENSHIP OR PLACE OF ORGANIZATION

State of Minnesota

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5. SOLE VOTING POWER

2,281,500

NUMBER OF  
SHARES  
BENEFICIALLY  
OWNED BY EACH  
REPORTING  
PERSON WITH

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6. SHARED VOTING POWER

0

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7. SOLE DISPOSITIVE POWER

5,389,400

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8. SHARED DISPOSITIVE POWER

0

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9. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

5,389,400

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10. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES\*

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11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)

13.0%

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12. TYPE OF REPORTING PERSON\*

IA

\*SEE INSTRUCTIONS BEFORE FILLING OUT!

Item 1(a) Name of Issuer:

CardioGenesis Corporation

Item 1(b) Address of Issuer's Principal Executive Offices:

26632 Towne Center Drive, Suite 320  
Foothill Ranch, CA 92610

Item 2(a) Name of Person Filing:

Perkins Capital Management, Inc.

Item 2(b) Address of Principal Business Office or, if None, Residence:

730 East Lake Street  
Wayzata, MN 55391

Item 2(c) Citizenship:

State of Minnesota

Item 2(d) Title of Class of Securities:

Common Shares

Item 2(e) CUSIP Number:

14159W-10-9

Item 3. If this statement is filed pursuant to Rules 240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:

- (a)  Broker or dealer registered under Section 15 of the Act (15 U.S.C.78o);
- (b)  Bank as defined in Section 3(a)(6) of the Act (15 U.S.C.78c);
- (c)  Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C.78c);
- (d)  Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C.8a-8);
- (e)  An Investment Adviser in accordance with Section 240.13d-1(b)(1)(ii)(E);
- (f)  An employee benefit plan or endowment fund in accordance with

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Section 240. 13d-1(b) (1) (ii) (F);

- (g)  A parent holding company or control person in accordance with Section 240. 13d-1(b) (1) (ii) (G);
- (h)  A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i)  A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C.80a-3);
- (j)  Group, in accordance with Section 240. 13d-1(b) (1) (ii) (J).

If this statement is filed pursuant to Section 240 13d-1(c), check this box.

Item 4. Ownership.

(a) Amount beneficially owned:

5,389,400

(b) Percent of class:

13.0%

(c) Number of shares as to which such person has:

(i) Sole power to vote or to direct the vote

2,281,500

(ii) Shared power to vote or to direct the vote

0

(iii) Sole power to dispose or to direct the disposition of

5,389,400

(iv) Shared power to dispose or to direct the disposition of

0

Item 5. Ownership of Five Percent or Less of a Class.

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following .

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

n/a

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.

n/a

Item 8. Identification and Classification of Members of the Group.

n/a

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Item 9. Notice of Dissolution of Group.

n/a

Item 10. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

February 4, 2005

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(Date)

/s/ Richard C. Perkins

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(Signature)

Richard C. Perkins  
Executive VP/Portfolio Manager

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(Name/Title)