| CARDIOGENESIS CORP/CA |
|-----------------------|
| Form SC 13G           |
| January 29, 2002      |
| UNITED STATES         |

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

| ,                         | -      |
|---------------------------|--------|
|                           |        |
| Cardiogenesis Corpora     | ation  |
| (Name of Issuer)          |        |
|                           |        |
| Common                    |        |
| (Title of Class of Securi | ities) |
|                           |        |
|                           |        |
| 14159W-10-9               |        |
| (CUSIP Number)            |        |
|                           |        |
|                           |        |
| December 31, 2001         |        |

(Date of Event Which Requires Filing of this Statement)

(Amendment No. )

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

X

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).

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

| CUSI | P No.  | 14159W-10-9        | Page 2 of 6 |
|------|--|--------------------|-------------|
| 1.   | Names of l   | Reporting Persons. |             |
|      | I.R.S. Identification Nos. of above persons (entities only). |                    |             |

|                          | Perkins Capital Management, Inc.  |                        |                          |
|--------------------------|---|------------------------|--------------------------|
|                          | 41-1501962  |                        |                          |
| 2.                       | Check the Appropriate Box if a Member of a Group (See Instructions)                 |                        |                          |
|                          | a.//  |                        |                          |
|                          | b.//  |                        |                          |
| 3.                       | SEC Use Only  |                        |                          |
|                          |   |                        |                          |
|                          |   |                        |                          |
| 4.                       | Citizenship or Place of Or  | ganization             |                          |
|                          | 730 East Lake Street, Wayzata, Minnesota 55391-1769                                 |                        |                          |
| Num                      | ber of  | 5.                     | Sole Voting Power        |
| Share                    | ares Bene- 676,500  |                        | 676,500                  |
| ficiall                  | cially owned 6. Shared Voting Power   |                        | Shared Voting Power      |
| by Ea                    | Each 0  |                        | 0                        |
| Reporting 7. Sole Dispos |   | Sole Dispositive Power |                          |
|                          |   |                        | 2,623,600                |
| Person                   | erson With:  8. Shared Dispositive Power  |                        | Shared Dispositive Power |
|                          |   |                        | 0                        |
| 9.                       | Aggregate Amount Beneficially Owned by Each Reporting Person                        |                        |                          |
|                          | 2,623,600   |                        |                          |
| 10.                      | Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) |                        |                          |
| 11.                      | Percent of Class Represented by Amount in Row (9)                                   |                        |                          |
|                          | 7.7%  |                        |                          |
| 12.                      | Type of Reporting Person (See Instructions)   |                        |                          |
|                          |   |                        |                          |

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### SEE INSTRUCTIONS FOR SCHEDULE 13G BEFORE COMPLETING

### Item 1.

| (a) | Name of Issuer  |  |
|-----|---|--|
| (u) | Cardiogenesis Corporations  |  |
| (b) | Address of Issuer's Principal Executive Offices                       |  |
|     | 26632 Towne Centre Drive, Suite 320, Foothill Ranch, California 92610 |  |

### Item 2.

| (a) | Name of Person Filing                                       |
|-----|---|
| (a) | Perkins Capital Management, Inc.                            |
| (b) | Address of Principal Business Office or, if none, Residence |
|     | 730 East Lake Street, Wayzata, Minnesota 55391-1769         |
| (c) | Citizenship   |
|     | Minnesota Corporation                                       |
| (d) | Title of Class of Securities                                |
|     | Common  |
| (e) | CUSIP Number  |
|     | 14159W-10-9   |

Item 3. If this statement is filed pursuant to ss240.13d-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(s)(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. 80a-8).
- (e) /X/ An investment adviser in accordance with s240.13d-1(b)(1)(ii)(E);

| (f) /_/ An employee benefit plan or endowment fund in accordance with s240.13d-1(b)(1)(ii)(F);   |
|--|
| (g) /_/ A parent holding company or control person in accordance with s240.13d-1(b)(ii)(G);  |
| (h) /_/ A savings associations 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©(14) of the                                |
| Investment Company Act of 1940 (15 U.S.C. 80a-3);  |
| (j) /_/ Group, in accordance with s240.13d-1(b)(1)(ii)(J).   |
|  |
| Item 4. Ownership  |
|  |
| Provide the following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1. |
| a. Amount Beneficially Owned:  |
| 2,623,600  |
| b. Percent of Class:   |
| 7.7%   |
| c. Number of shares as to which such person has:   |
| i. Sole power to vote or to direct the vote:   |
|  |
| 676,500  |
| ii. Shared power to vote or to direct the vote:  |
| 0  |
| iii. Sole power to dispose or to direct the disposition of:  |
| 2,623,600  |
| iv. Shared power to dispose or to direct the disposition of:   |

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|---|
| Instruction:  |
| For computations regarding securities which represent a right to acquire an underlying security see s240.13d(1).  |
| 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 /_/.  |
| Instruction:  |
| Dissolution of a group requires a response to this item.  |
| Item 6. Ownership of More than Five Percent on Behalf of Another Person.  |
| If any other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such securities, a statement to that effect should be included in response to this item and, if such interest relates to more than five percent of the class, such person should be identified. A listing of the shareholders of an investment company registered under the Investment Company Act of 1940 or the beneficiaries of employee benefit plan, pension fund or endowment fund is not required. |
| Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company   |
| If a parent holding company has filed this schedule, pursuant to Rule 13d-1(b)(ii)(G), so indicate under Item 3(g) and attach an exhibit stating the identity and the Item 3 classification of the relevant subsidiary. If a parent holding company has filed this schedule pursuant to Rule 13d-1(c) or Rule 13d-1(d), attach an exhibit stating the identification of the relevant subsidiary.  |
| Item 8. Identification and Classification of Members of the Group   |

If a group has filed this schedule pursuant to s240.13d-1(b)(1)(ii)(J), so indicate under Item 3(j) and attach an exhibit stating the identity and Item 3 classification of each member of the group. If a group has filed this schedule pursuant to s240.13d-1(c) or s240.13d(d), attach an exhibit stating the identity of each member of the group.

### Item 9. Notice of Dissolution of Group

Notice of dissolution of a group may be furnished as an exhibit stating the date of the dissolution and that all further filings with respect to transactions in the security reported on will be filed, if required, by members of the group, in their individual capacity. See Item 5.

### Item 10. Certification

• The following certification shall be included if the statement is filed pursuant to s240.13d-1(b):

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

• The following certification shall be included if the statement is filed pursuant to s240.13d-1(c):

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 or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that 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.

January 25, 2002

| Date                                     |
|--|
|  |
|  |
|  |
| Signature                                |
|  |
| Richard C. Perkins, VP/Portfolio Manager |
| Name/Title                               |

The original statement shall be signed by each person on whose behalf the statement is filed or his authorized representative. If the statement is signed on behalf of a person by his authorized representative other than and executive officer or general partner of the filing person, evidence of the representative's authority to sign on behalf of such person shall be filed with the statement, provided, however, that power of attorney for this purpose which is already on file with the Commission may be incorporated by reference. The name and any title of each person who signs the statement shall be typed or printed beneath his signature.

NOTE: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. *See* s240.13d-7 for other parties for whom copies are to be sent.

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001)