

CARDIOVASCULAR SYSTEMS INC  
Form RW  
November 04, 2008

Cardiovascular Systems, Inc.  
651 Campus Drive  
St. Paul, MN 55112

November 4, 2008

VIA EDGAR SUBMISSION

Securities Exchange Commission  
Division of Corporation Finance  
100 F. Street N.E.  
Washington, DC 20549

Re: Request for Withdrawal of Registration Statement on Form S-1 (File No. 333-148798)

Ladies and Gentlemen:

Pursuant to Rule 477 under the Securities Act of 1933, as amended (the Securities Act ), Cardiovascular Systems, Inc., a Minnesota corporation (the Company ), respectfully requests that the Securities and Exchange Commission (the Commission ) consent to the withdrawal, effective as of the date hereof or at the earliest practicable date hereafter, of its Registration Statement on Form S-1 (File No. 333-148798), together with all exhibits and amendments thereto (collectively, the Registration Statement ). The Registration Statement was originally filed with the Commission on January 22, 2008.

The Company is withdrawing the Registration Statement and will not compete the proposed public offering because the Company has entered into an Agreement and Plan of Merger with Replidyne, Inc. ( Replidyne ) and Responder Merger Sub, Inc. ( Merger Sub ) dated November 3, 2008, pursuant to which Merger Sub will merge with and into the Company, causing the Company to become a wholly-owned subsidiary of Replidyne.

The Registration Statement has not been declared effective by the Commission and no securities have been issued or sold under the Registration Statement.

If you have any questions or comments or require further information or documentation, please contact Robert K. Ranum of Fredrikson & Byron, P.A., the Company s outside counsel, at (612) 492-7067. Please provide a copy of the Order consenting to this withdrawal to Mr. Ranum by facsimile at (612) 492-7077.

Sincerely,

CARDIOVASCULAR SYSTEMS, INC.

By: /s/ David L. Martin  
Name: David L. Martin  
Title: Chief Executive Officer