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**Letter to shareholders  
From the Managing Director**

25 September, 2002

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Dear Shareholders,

I am pleased to confirm that each of the strategic objectives for 2002 has been achieved.

At the close of last year the Company announced that cash retention would be the paramount objective during the ensuing period of expected world financial and security uncertainty. Concurrently research and development expenditure would be maintained and the Company loss would be reduced.

At June 30 this year, we had A\$40 million dollars in the Novogen Group. This is more than at any time in the Company's history, and it was an increase of 28% over the prior period. Our objective of reducing the loss this year was achieved with a 33% improvement over the prior year.

We conserved cash and accumulated additional funds during a very lean time for international financing. Our resolve to maintain the Research and Development investment programs at the planned rate has also been achieved with excellent outcomes announced during the year.

The primary methods by which we achieved these seemingly conflicting strategic outcomes were through cost control, particularly reductions in international marketing for the consumer business, and through the very successful stock market floatation of our US subsidiary company Marshall Edwards, Inc. The marketing constraints had the inevitable effect of reducing sales of the consumer products, but given that it was an unsettled year for consumer spending, particularly in the US, the sales contraction was in fact less than the commensurate marketing reductions.

The summary of our financial position as at end of the accounting year, is that the Company is in the best financial position it has been in at any time during its eight years as a publicly listed company.

#### **NOVOGEN'S POSITION GOING FORWARD**

We are a company with ongoing investments in very exciting and promising research and development and clinical trials. We are also investing in the creation of an international consumer manufacture and marketing business.

Our investment in the consumer business offers us the opportunity to establish self-funding operations in a number of other countries. This has advantage for the future commercial infrastructure needs of the Company by having Novogen staff in situ in countries where we will be active across our entire business portfolio. The consumer business is scheduled to be self funding for the current products within the next two years across all our established territories of Australia, the US, Canada, the UK and the Netherlands. Over that period we will be assessing the benefits of expanding further into other regions, and launching new products.

Pharmaceutical commercialisation for us means the successful licensing out of one or more major drug programs. This would then allow us to quicken the pace of further investment in the follow-on compounds from our vast library of opportunity. With three programs already in human trials and others now in pre-clinical studies. The upside from these investments is significant.

## **CORPORATE DEVELOPMENTS THIS YEAR**

The significant corporate achievement this year was the May 2002 listing on the London Stock Exchange's Alternative Investment Market of our US subsidiary company Marshall Edwards, Inc.

Marshall Edwards, Inc is the company charged with continuing the human clinical trialing and commercialisation of the anti-cancer drug phenoxodiol. The successful floatation of the company facilitated the raising of US\$10.1 million from predominantly US investors.

Marshall Edwards, Inc is now 95.2% owned by Novogen. The notional market capitalisation of Marshall Edwards was around A\$380 million at its listing in May 2002, and the money raised was efficiently and cost effectively introduced into the Novogen Group through this process. As shareholders in Novogen, we now own much more of the phenoxodiol drug program than we would have done had we introduced the necessary monies directly into Novogen.

Structurally, we have international operations through our subsidiary companies, and stock market listings on three exchanges – two with Novogen and one with Marshall Edwards.

We are keeping the commercialisation objective firmly in our sights and the Company structure now facilitates the flexibility needed to engage in intellectual property licensing dealings that may also involve equity transactions, or arrangements that are regionally focused.

## **DEVELOPMENTS THIS YEAR**

With three drug programs now in clinical trials, the year in review is perhaps best summarised by the milestone announcements we have made to the stock markets.

### *Anti-cancer*

- phenoxodiol proved well tolerated with demonstrated activity in cancer patients – 31 Oct 01
- US clinical trials on experimental anti-cancer drug phenoxodiol to be expedited – 19 Nov 01
- Anti-cancer drug phenoxodiol to start clinical trial in patients with leukaemia – 19 Dec 01
- phenoxodiol stabilises cancer progression with minimal toxicity – 8 April 02
- Marshall Edwards, Inc. and the National Institutes of Health join forces to study the anti-cancer drug phenoxodiol – 24 July 02
- Marshall Edwards, Inc. and Yale University Medical School to develop phenoxodiol for ovarian cancer – 28 Aug 02

### *Cardiovascular*

- Cardiovascular program commences human phase I clinical trial – 29 May 02
- Cardiovascular drug program 'outstanding' in first human clinical trial – 9 Sept 02

*Anti-inflammatory*

- New human trial commences for dermatological compound NV-07 $\alpha$  – 13 June 02
- Major new cosmetic opportunity – researchers discover new mode of action for skin repair compound NV-07 $\alpha$  – 18 Sept 02

*Consumer products*

- Clinical trial shows Promensil offers relief of common breast condition – 13 Nov 01
- Red clover dietary supplement inhibits growth of prostate cancer cells in human clinical trial – 11 Feb 02
- Novogen receives US patent covering red clover isoflavone and osteoporosis – 27 Feb 02
- Promensil produces significant cholesterol reduction in women – new study – 17 June 02

**THE YEAR AHEAD**

I would like to highlight the devotion and creativity continually displayed by the Novogen team. We have a very energetic and focused group. It is the staff who implement the strategy, make the inventions, ensure the progress, capitalise on the financing opportunities, run the manufacturing facilities, and add the value that we rely on to keep making Novogen the powerful intellectual property company that it is.

We have an extensive compound library and this ensures that novel and exciting potent compounds flow into the pre-clinical pipeline. We have experience with clinical supervision, and manage laboratory and human clinical trials across continents. We have operations and research across the world and have a shareholder base which is increasingly international.

Your Company is in an excellent position to capitalise on one of the most exciting areas of human invention now taking place. The rewards of our success will be shared between shareholders and the future patients who will directly benefit from our scientific and medical achievements.

Yours sincerely



Christopher Naughton  
Managing Director

Please note as advised at the time of the half yearly report, that unless you have indicated otherwise the financial section of the annual report is mailed to you. The other section, the Company Summary, is available on line at [www.novogen.com](http://www.novogen.com); if you do not have access to the internet and would like a copy please contact the Company.

To all Novogen shareholders

This is a copy of a letter from the Chairman of Marshall Edwards, Inc which was recently sent to Marshall Edwards, Inc. shareholders and has been included here for your information.

**MARSHALL EDWARDS, INC.**

**CHAIRMAN'S LETTER TO SHAREHOLDERS**

September 4, 2002

Dear Shareholder

This letter is a report on the status of the development of the Marshall Edwards, Inc. (the Company) anti-cancer drug phenoxodiol, and the development strategy for the drug.

### SUMMARY

The Phase I program for the intravenous dosage form of phenoxodiol is drawing to a close and phenoxodiol now has entered the formal approval stage for its Phase IIb clinical trials that will see the drug evaluated for efficacy. The existing program has met its objectives - confirming the drug's high level of safety, providing valuable information on how the drug behaves in the body, and providing early evidence of its anti-cancer action.

The focus of the drug development program remains the intravenous dosage form of phenoxodiol. An oral dosage form also is being evaluated clinically, but it is the intravenous form that is the most advanced and that will be taken immediately into full Phase II testing.

Concurrent with the clinical program, ongoing laboratory studies are being conducted to define the mechanism of action of phenoxodiol. Those studies now have confirmed phenoxodiol causes the cancer cells to undergo apoptosis (cell death) by activating the cancer cell's self-destruct mechanism. The way that phenoxodiol does is this unique and has been recognized for some time now as an important goal for the next generation of anti-cancer drugs. Phenoxodiol causes death of cancer cells even when the cells are highly resistant to the lethal effects of standard anti-cancer drugs.

The ability of cancer cells to survive indefinitely through inactivation of proteins known as death receptor proteins is common to many human cancers. Approximately half of the cancers that arise in such tissues as the ovary, kidney, pancreas and gall bladder, plus the common forms of leukemia, are able to survive because they have inactivated their death receptors. Reactivating those death receptors results in the cancer cell immediately self-destructing. Recent laboratory studies conducted at a university in the U.S. have discovered that the anti-cancer action of phenoxodiol lies in its ability to reactivate the death receptors on cancer cells in a very potent manner. Just as importantly, this effect is limited to cancer cells with the death receptor mechanism in non-cancer cells being unaffected by phenoxodiol.

This means that phenoxodiol has the potential to be an effective anti-cancer agent in its own right for a wide range of human cancers.

However, recent research has shown a way by which phenoxodiol works effectively even in those cancers where inactivation of the death receptors is not a primary cause of the cancer. The Phase II stage of the program will incorporate this recent important discovery and will compare the efficacy of phenoxodiol alone and in combinational therapy.

**This is the first known trial in humans of anti-cancer therapy that is targeting reactivation of the death receptors in a highly selective manner.**

The cancer types that the Phase II program for the intravenous dosage form will focus on are ovarian carcinoma, renal carcinoma and leukemia.

### MECHANISMS OF ACTION

Identifying the best uses for phenoxodiol hinges on an increased understanding of its mechanisms of action.

For that reason, the Company is putting considerable effort into this area. We are pleased to report that those studies have delivered some important achievements that confirm our early view that phenoxodiol heralds a new class of anti-cancer drug and represents a major new therapeutic opportunity, particularly with cancers that have proven highly resistant to standard therapies.

We now know that two key targets of phenoxodiol in cancer cells are the death receptors and an enzyme known as sphingosine kinase.

#### Target # 1: *Death receptors*

The death receptors are a family of proteins on the surface of all cells that, when activated, lead immediately to the death of the cell. These receptors (Fas, TNFR1, DR3, DR6) trigger the cell to self-destruct within one to two days through a process of auto-digestion (known as apoptosis). The death receptors and apoptosis are important to our health, allowing the body's immune system to kill a cell whenever it is damaged or when it is required to die as part of normal tissue remodeling.

Normal, healthy cells prevent accidental triggering of this mechanism by producing blocking proteins (known as *anti-apoptosis proteins*, e.g. c-FLIP) that block low level activation of the death receptors. A damaged cell normally shuts off production of these anti-apoptosis proteins, thereby allowing the immune system to trigger apoptosis by contacting the death receptors.

Cancer cells resist this process by producing large amounts of blocking proteins, such as c-FLIP. In this way, cancer cells are protected from the body's immune system. Switching off the production of these blocking proteins in cancer cells leads immediately to their death. For this reason, these blocking proteins have become recognized as an important new target for a new generation of anti-cancer drugs. However, the challenge has been how to knock-out c-FLIP production in cancer cells without having a similar effect in non-cancer cells.

Phenoxodiol now is confirmed as the first drug to achieve this outcome. Phenoxodiol potently switches off the production of anti-apoptotic proteins in human cancer cells in a highly selective manner. A research team at **Yale University Medical School** is responsible for discovering this mechanism and Marshall Edwards Inc. is continuing to work closely with them on this aspect of phenoxodiol's function.

#### **Target # 2. Sphingosine kinase:**

Phenoxodiol inhibits the activity of the enzyme, sphingosine kinase. Sphingosine kinase is a key enzyme in enabling a cell to respond to growth signals. It is essential to the survival of all cells.

As with the anti-apoptosis proteins, sphingosine kinase activity is highly elevated in many forms of human cancer. In particular, it is an enzyme on which many forms of human cancer (particularly ovarian cancer and leukemia) are dependent for their ability to grow and to metastasize. However, sphingosine kinase also is an oncogene, which means that abnormally high activity of this enzyme will cause cancer.

A small number of drugs are known to be under development to target this important enzyme, but phenoxodiol is unique in inhibiting sphingosine kinase only in cancer cells. As with c-FLIP levels, sphingosine kinase activity in non-cancer cells is unaffected by phenoxodiol. **Phenoxodiol is the first inhibitor of sphingosine kinase activity to be tested in humans.**

Studies are continuing in collaboration with a number of centers including the **Medical University of South Carolina** to fully describe this effect and to explore the likely link between sphingosine kinase activity and the production of anti-apoptosis proteins.

The studies being conducted at **Yale University Medical School** and the **Medical University of South Carolina** are part of an integrated research program involving a number of research institutions designed to characterize the way in which phenoxodiol exerts its unique effects. The **National Institutes of Health (NIH)** is part of that international co-ordinated program, bringing to the program particular expertise in how anti-cancer drugs affect the ability of cancer cells to proliferate, and the development of drugs for treatment of head and neck cancers, a particularly difficult cancer type to treat.

## PHASE I CLINICAL PROGRAM

The current Phase I program is evaluating two dosage forms of phenoxodiol – an intravenous form and an oral form. The main objective of this program is to provide information on such matters as the safety of the drug and its behavior in the body.

The issue of whether or not the drug is producing an anti-tumor response is normally not a key objective in Phase I, as a significant anti-tumor effect is not normally anticipated at this level of study. In fact even anti-cancer drugs that ultimately go on to receive marketing approval because of their potent anti-cancer effect, on average show very poor tumor response in patients in Phase I programs. This low response rate in other drugs is due to various reasons: the advanced nature of the disease in the patients being used, the fact that the cancers have become unresponsive to standard chemotoxic drugs, and the fact that a broad variety of dosages and treatment schemes (including ineffective ones) are being evaluated.

Despite this, the Company was sufficiently confident in phenoxodiol that it sought to look for preliminary evidence of efficacy at this level of trialing. For this reason, the program was designated Phase Ib/IIa.

This program has involved five separate studies. Three of these are using the intravenous formulation of phenoxodiol and two are using the oral dosage formulation. This unusually large number of clinical studies has been possible because of the anticipated low toxicity of the drug. The strategy behind this multi-trial program was to expedite the drug's development by seeking answers to a number of key therapeutic questions at the one time, such as weekly versus continuous intravenous injection, oral versus intravenous dosage, and discovering which tumor types are the most sensitive.

All patients enrolled in these studies must have had advanced, metastatic cancers and have failed standard anti-cancer therapies. Phenoxodiol is the only anti-cancer drug given during the trial.

***Weekly intravenous treatment.*** This treatment schedule was examined in a study conducted at an Australian hospital (St. George Hospital, Sydney). It was completed recently and the large amount of data is in the process of being evaluated. That process is expected to provide a final report within the next few months.

In this study, phenoxodiol was administered as a single weekly intravenous injection to 21 patients (with a variety of solid tumors) for treatment cycles of six weeks. Doses of between one and 30 mg/kg were used. Treatment was continued indefinitely provided that there was no toxicity and no disease progression.

Interim results of this study have been reported to a November 2001 meeting and the April 2002 annual meeting of the American Association for Cancer Research.

No significant toxicity was observed. None of the usual toxicities associated with many anti-cancer drugs involving the bone marrow (anemia), skin (hair loss), gut (nausea, diarrhea) or nervous system (loss of function) were encountered.

Also confirmed was the fact that phenoxodiol was released into the body in a form that was available to act against cancer cells, that phenoxodiol was not broken down (metabolised) in the body to any significant extent, and that levels of phenoxodiol reached in the body were up to 15 times those required to kill cancer cells in the laboratory.

A number of patients were able to continue on treatment beyond 12 weeks, with one patient (with metastatic renal carcinoma) remaining on the drug for 20 months.

***Continuous intravenous treatment.*** This method of administration was studied at two sites - Australia's largest tertiary-care hospital (Royal Prince Alfred Hospital, Sydney), and the Taussig Cancer Care Center, Cleveland Clinic Foundation, Cleveland, USA.

In this approach, the drug is infused on a continuous basis via a pump into the bloodstream over seven days. Whereas the weekly intravenous injection approach delivers high levels of drug in the body over no more than several hours, the continuous intravenous infusion approach delivers a constant, lower drug level over days or weeks. The two different methods of administration were being evaluated for possible use in the Phase II clinical trials.

Patients with various forms of advanced, solid tumors were treated for six cycles, comprising seven days on and seven days off per cycle. Patients received dosages ranging from 0.3 – 47 mg/kg/day. Treatment was continued until patients showed toxicity or disease progression.

The Australian arm of the study used dosages ranging from 2- 40 mg/kg/day. That study finished in July 2002, and the data currently is being evaluated. The results of this study have not been made public by the hospital concerned pending presentation of the data at a future scientific conference and publication in a scientific journal.

However, it is possible to confirm that no toxicities were reported in the 24 patients in the study and that the study met its objectives in confirming achievement of steady-state levels of drug over the period of treatment. A number of patients also were able to continue on therapy beyond six treatment cycles without disease progression.

The U.S. arm of the study is nearing completion, with 18 patients enrolled and six patients still to be enrolled. This study has been extended recently to provide greater focus on the lower (0.3- 3.3 mg/kg/day) and upper (up to 47 mg/kg/day) ends of the dosage range.

Interim results of the first 10 patients in this study were reported to the American Association for Cancer Research in April 2002, noting that there was no significant toxicity and that six of the 10 patients treated with dosages ranging between 0.6 – 3.3 mg/kg/day showed stabilized tumors over the period of treatment.

This study should be fully recruited by November 2002.

**Oral dosage treatment.** Two studies are being conducted at two Australian hospitals. One study involves patients with advanced prostatic cancer, and the second study involves patients with various forms of leukemia.

Both of these studies are in their early stages and interim results are expected in 2003.

#### PHASE II CLINICAL PROGRAM

This next phase of development of the intravenous dosage form will be conducted in patients with specific tumor types – ovarian carcinoma, renal carcinoma and leukemias. These tumor types are thought to be particularly appropriate because of their particular dependency for survival and growth on sphingosine kinase function and on blockage of death receptor activity.

It is proposed to conduct the Phase II program as multi-center trials using both U.S. and Australian hospitals. Hospitals in other territories will be added as needed.

The Phase II program will be conducted in two parts over the next 15 months and is expected to involve several hundred patients. In the first part, phenoxodiol will be used as a monotherapy. In the second part, phenoxodiol will be used in combination with another agent.

The first of these trials is planned to involve ovarian cancer patients in both Australian and U.S. hospitals and currently is being considered by the relevant Institutional Review Boards. This trial is expected to commence in November 2002.

#### ONCOLOGY DRUG PROGRAM

Marshall Edwards, Inc. has an active interest in the oncology drug program that Novogen Limited is pursuing and from which phenoxodiol derives. Under the terms of its license agreement with Novogen, the Company has an option over any new oncology drugs emanating from that program that advance to human clinical trials. It is worth highlighting a number of features of that program that are of ongoing interest to Marshall Edwards, Inc.

A large number of analogues of phenoxodiol have been synthesized. These are compounds based on the phenoxodiol structure, but modified to varying degrees. The effect of that structural modification is to produce new drugs with different anti-cancer effects compared to phenoxodiol. Of particular interest is the finding that it is possible to produce drugs with specific activity against specific types of cancer. This is an entirely novel and exciting finding, pointing to the ability of Novogen scientists to customize drugs for specific cancer types.

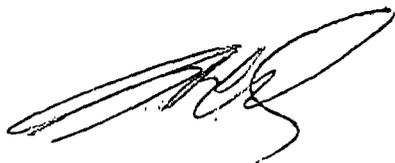
Marshall Edwards, Inc., in conjunction with Novogen, has adopted a strategy of developing drug candidates for specific tumor types such as breast cancer, neuroblastoma (the major form of cancer in children) and mesothelioma. Collaborations are being formed with world-leading

research institutions in each of these areas in order to take new drugs into the clinic for specific forms of cancer for which there are few current treatment options.

The goal of Marshall Edwards, Inc. and Novogen is to develop a family of anti-cancer drugs, all based on the phenoxodiol structure, with complementary activity that will provide treatment options across most forms of human cancer.

I hope that you agree with me that this is an exciting program and that the Company is well positioned with its intellectual property position to become a significant force within the oncology field.

Yours faithfully



Dr Graham Kelly

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