

Novogen Limited

ASX: NRT

Bloomberg: NRT AU

Reuters: NRT.AX

15 July 2003

\$4.99

BUY

Block-buster drug potential remains

# of Shares:	97M	Market Cap:	\$484M	Current Price	\$4.99
% All Ords:	0.1%	% Sector:	2.2%	12 Month Target:	\$6.39

FIGURE 1: SHAREPRICE CHART

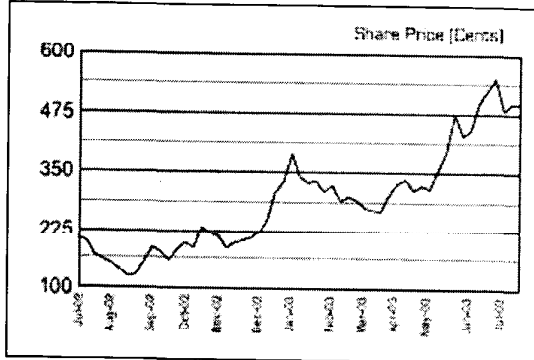


TABLE 1: EARNINGS SUMMARY

Yr to Jun	2002A	2003F	2004F	2005F
NPAT Rep (\$M)	(15)	(9)	(9)	(8)
NPAT ¹ Adj (\$M)	(15)	(9)	(9)	(8)
EPS (c)	(15.2)	(9.0)	(8.9)	(7.4)
DPS (c)	0.0	0.0	0.0	0.0
P/E (x)	(32.8)	(55.4)	(56.2)	(67.2)
Yield (%)	0.0	0.0	0.0	0.0
Franking (%)	0	0	0	0
EPS growth (%)	n/a	n/a	n/a	n/a

¹ Profit & EPS adjusted for options, goodwill, non-recurring earnings and non-recurring items.

Event

In the lead up to NRT's FY03 results we have reviewed its operations and drug development pipeline.

Implications

We have maintained our earnings loss expectations for the short term but updated our valuation model with Phenoxodiol's progress toward commercialisation. Our probabilistically weighted valuation has increased to \$6.39.

Investment Opinion

Novogen comprises two distinct business streams: 1) over the counter (OTC) consumer health care products, Promensil, Trinovin and Kimostil and 2) the development of Phenoxodiol compound, a promising anti-cancer drug.

Novogen offers investors exposure to early stage development of a pipeline of projects aimed at auto-immune disease. Positive preliminary results associated with NRT's anti-cancer drug candidate provide the key driver to our BUY recommendation. R&D funding relies on three mechanisms: 1) cash reserves (sufficient for two to three years) 2) turn around of consumer health business 3) license agreements (must be struck in the next 12 to 18 months to maximise the value of Phenoxodiol).

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Recommendation¹: BUY 12M Target: \$6.39 Company risk²: Share Price risk²: Ethical rating³:

Year end Jun. All figures in A\$M

Profit & loss summary					Ratio analysis				
	2002A	2003F	2004F	2005F		2002A	2003F	2004F	2005F
Operating revenue	21	21	23	25	Sales growth (%)	-19.5	-3.1	10.0	10.0
Invest & other income	0	0	0	0	EBITDA growth (%)	n/a	n/a	n/a	n/a
EBITDA	(14)	(10)	(12)	(10)	EPS growth (%)	n/a	n/a	n/a	n/a
Depreciation/Amort	(2)	(2)	(2)	(1)	EBITDA/Sales margin (%)	-66.3	-48.8	-54.4	-39.4
EBIT	(16)	(12)	(14)	(11)	EBIT/Sales margin (%)	-74.8	-56.8	-61.2	-45.4
Net Interest	2	1	1	1	Tax rate (%)	-0.3	18.7	29.9	29.9
Pre-tax profit	(15)	(11)	(13)	(11)	Net debt/equity (%)	-69.1	-52.4	-35.9	-17.0
Tax expense	0	2	4	3	Net debt/net debt + equity (%)	-223.3	-110.1	-56.0	-20.5
Minorities/Assoc./Prefs	0	0	0	0	Net interest cover (x)	n/a	n/a	n/a	n/a
NPAT	(15)	(9)	(9)	(8)	Payout ratio (%)	0.0	0.0	0.0	0.0
Non recurring items	0	0	0	0	Capex to deprec'n (%)	18.1	23.7	26.1	30.3
Reported profit	(15)	(9)	(9)	(8)	NTA per share (\$)	0.55	0.45	0.39	0.32
NPAT add Goodwill & Pref	0	0	0	0	ROA (%)	-67.4	-20.7	-28.9	-27.3
Adjusted profit	(15)	(9)	(9)	(8)	ROE (%)	-72.9	-18.1	-21.6	-21.6
Cashflow summary					Multiple analysis				
	2002A	2003F	2004F	2005F		2002A	2003F	2004F	2005F
EBITDA	(14)	(10)	(12)	(10)	Market cap (\$M)	484			
Working capital changes	0	(5)	(1)	1	Net debt (\$M)	(25)			
Interest and tax	1	1	1	1	Peripheral assets (\$M)	(430)			
Other operating items	8	1	0	0	Enterprise value (\$M)	28			
Operating cashflow	(6)	(13)	(12)	(9)	EV/FBIT (x)	(1.8)	(2.4)	(2.0)	(2.5)
Required capex	0	0	0	0	EV/EBITDA (x)	(2.0)	(2.8)	(2.3)	(2.9)
Maintainable cashflow	(6)	(14)	(12)	(9)	EV/EBITDA All Ind (x)	10.5	9.6	8.7	8.2
Dividends	0	0	0	0	EV/EBITDA rel All Ind (x)	(0.2)	(0.3)	(0.3)	(0.3)
Acq/Disp	0	0	0	0	P/E (x)	(32.8)	(55.4)	(56.2)	(67.2)
Other investing items	0	0	0	0	P/E rel All Ind (x)	(1.7)	(3.4)	(4.0)	(5.3)
Free cashflow	(6)	(14)	(12)	(9)	P/E rel All Ind ex banks (x)	(1.5)	(3.0)	(3.7)	(4.9)
Equity	19	0	3	1	P/E sector (x)	21.3	18.9	14.6	14.1
Debt inc/(red'n)	(3)	8	10	8	P/E rel sector (x)	(1.5)	(2.9)	(3.9)	(4.8)
Balance sheet					Assumptions				
	2002A	2003F	2004F	2005F		2002A	2003F	2004F	2005F
Cash & deposits	40	26	17	8	GDP growth (%)	4.05	3.50	3.33	3.25
Inventories	7	10	11	10	Interest Rates (%)	4.70	5.38	5.50	5.50
Trade debtors	5	4	4	5	Inflation (%)	3.25	2.50	2.45	2.50
Other curr assets	1	0	0	0					
Total current assets	52	41	32	23					
Prop., plant & equip.	9	8	7	6					
Non-curr intangibles	0	0	0	0					
Non-curr investments	0	0	0	0					
Other non-curr assets	1	2	6	9					
Total assets	62	51	45	38					
Trade creditors	4	3	3	3					
Curr borrowings	1	1	1	1					
Other curr liabilities	0	0	0	0					
Total current liab.	5	4	4	4					
Borrowings	0	0	0	0					
Other non-curr liabilities	2	2	2	2					
Total liabilities	8	6	6	6					
Minorities/Convertibles	1	1	1	0					
Shareholders equity	54	45	39	32					

Notes: 1. The recommendation system rates stocks on a 12 month, absolute basis based on the total return (capital and dividends). BUY denotes an expectation of 15% or more total return; SELL 5% or less; HOLD within the range of 5-15%. ACCEPT OFFER relates to a situation where there is a public offer for shares and our view is to accept that offer. COMM means this research has been commissioned and Aegis has received a fee for publication and therefore it contains no recommendation.

2. The risk ratings are on a 12 month perspective, where five stars denotes low risk and one star denotes high risk. Company risk takes into account expected financial, strategic and execution risks associated with the company. Share price risk is a measure of the expected volatility of the price and other trading factors.

3. The Ethical rating rates a company on an ethical investment basis where five stars denote very good and one star a poor rating. The score is based on two key factors: areas of operating and environmental (ratings will soon include corporate governance and social factors). For more information see www.aer.com.au.

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The three value drivers for NRT remain its:

- 1) Anti-cancer compound - Phenoxodiol,
- 2) NRT's Drug/compound pipeline and the
- 3) Over the counter (OTC) dietary supplement business

Anti-cancer compound - Phenoxodiol

The primary value driver for NRT we believe remains its promising anti-cancer compound – Phenoxodiol. Phenoxodiol is now licensed to Marshall Edwards, a stand alone company listed on the Alternative Investment Market of the London Stock Exchange. Novogen retains a 95% shareholding in the company.

NRT has been developing Phenoxodiol for over five years taking it successfully through pre-clinical and Phase I and early Phase II clinical trials. Recently the development of Phenoxodiol has received a prestigious boost by the collaboration with US researchers from Yale University School of Medicine (Yale Group). The Yale Group seems to have isolated the mechanism of action of the drug, an important step toward understanding the drug and gaining regulatory approval. Having a high profile respected US cancer researcher as a collaborator should also help Phenoxodiol achieve FDA approval, a critical pre-requisite for sales to commence.

To briefly summarise the anti-cancer technology – Phenoxodiol targets “multiple signal transaction regulators” thereby attempting to restore key decision making processes to cancer cells. This in theory should stop the cells from multiplying and is a different approach to the usual one of trying to block the cancer cell's ability to multiply or to survive. The advantage of this approach is that the drug is less toxic to cells that already have a healthy decision making process. It also potentially explains why Phenoxodiol may work in a range of cancers.

While it is difficult to judge whether Phenoxodiol will retain pre-clinical efficacy once it is tested in real cancers patients, Phenoxodiol does have three important advantages which may assist in its path to market. Firstly Phenoxodiol has consistently demonstrated to have very low toxicity. Secondly it is potentially available orally. Thirdly and probably most importantly it has no known side-effects. These characteristics are important as many cancer drugs fail during clinical testing as they prove to be more toxic or have major side effects which are often worse than the disease. The ability to dose orally also makes the drug much more marketable relative to a drug that requires medically supervised intravenous administration. The other exciting potential is the apparent ability of Phenoxodiol to act on drug resistant cancer cells. While Phenoxodiol is being developed as a mono-therapy recent laboratory results indicate it may also be effective in enhancing the effect of established chemotherapy drugs thereby giving it an additional drug potential.

NRT has taken Phenoxodiol through phase I trials (i.e. toxicity/dose studies) and is now investigating its overall efficacy in a number of Phase II studies. Below we have outlined the current clinical trials NRT's all drug candidates are involved in. We have included the number of Trial participants and likely result dates. While result dates indicate expected trial results announcement it is possible for the research groups (though not the company) to release preliminary data. The next milestone drug results announcements are likely to be later this year regarding the Leukaemia trial followed by the results of the important Yale Group study early next year.

TABLE 2:

Drug/Compound	Collaborator	Disease/condition targeted	Administration	Stage	Status	Duration of Treatment	Patients	Results expected (CY)
Phenoxodiol	Yale	Advanced stage ovarian cancer	Intravenous	Phase2	Current	12 week	40	1Q04
Phenoxodiol	Yale	Vercical Squamous cell carcinoma	Oral	Phase2	Approval3Q03	~10week	~40	3Q04
Phenoxodiol	RNS Hospital	Squamous cell carcinoma (SCC)	Oral	Phase2	Current	12 week	30	2Q04
Phenoxodiol	Monash/Sir C.Gairdner Hosp	Prostate Cancer	Oral	Phase2	Current	4 week	24	2Q04
Phenoxodiol	RNS Hospital	Leukaemias	Intravenous	Phase2	Current	6 week	30	3Q03
NV04	Allred Hosp/Baker Medical Research	hypertension, atherosclerosis	Oral	Phase1	Pending	6-8 weeks	~2-30	2H04
NV-07B	QIMR/RPA Hospital	Inflammatory Bowel diseases	Oral	Pre-clinical			na	2004
NV-07a	N/a	Photoageing/cosmetic use	Topical	Phase2	Complete	-		2H03

Source: Company/Aegis Equities

NRT intends to develop Phenoxodiol through the Phase II stage before finding a commercial partner prior to the more expensive and complex Phase III trials. The recent trend by the FDA to fast track important drugs so they can be commercialised even while Phase III studies are being conducted means the path to market is getting easier for drugs that can show a clear patient benefit. The nature of any licensing deal remains conjecture but typical deals involve milestone payments, usually an equity injection and a manufacturing contract plus a royalty stream. NRT has deliberately placed its Phenoxodiol IP into separately listed Marshall Edwards to help facilitate such a transaction. Once a drug is licensed by the FDA there is nothing to stop doctors using for other conditions so any licensing deal will need to incorporate consideration for Phenoxodiol's apparent multi-cancer application. To illustrate how lucrative such deals can be we present a table of typical licensing deals over the past few years (NB royalties are payable in addition with drug sales projected in \$500-\$1B ranges and royalties ranging from 5-30%).

TABLE 3: ONCOLOGY DRUG DEALS

Companies	Drug/Technology	Size(US\$M)
Merck/Imclone	Ebitux	1,900
Aventis/Genta	Antis-sense/BCL-2	480
Isis/Lilly	Isis 3521	200
Genentech/OSI	Tarceva	187
Pfizer/Onyx	Onyx-015	160
Abbott/Supergen	Rubitecan	150

Source: Company/Aegis Equities

As a word of caution, while there are many things going for Phenoxodiol we must remember we are still only in Phase II studies. It is estimated that there are currently over 300 cancer drugs in development. Many drugs have passed Phase II only to fail when given to a broad spectrum of patients in the more extensive Phase III trials. In Phase III a drug's efficacy needs to be shown over a longer period, usually in multiple sites. These studies are the definitive tests for drugs as they must contend with many more variables coming into play like drug resistance, interactivity with other drugs, etc. Previous positive results don't necessarily guarantee success in later stages, as was the experience with cancer drug Isis 3521 that provided good Phase II results only to fail in Phase III.

Product Pipeline

Apart from Phenoxodiol, NRT is investigating a number of other potentially commercial compounds derived from the isoflavonoids family. The most developed of these is NV07a an anti-ageing compound that has potential cosmetic potential. NRT has successfully completed Phase II testing and is now seeking a commercial partner to further develop the discovery.

Two other pharmaceutical compounds NV04 and NV07B are also in early stage testing. NV04 an anti-hypertensive is undergoing human toxicology studies while NV07B an anti-inflammatory bowel disease candidate is at the preclinical stage. Another 100 potentially interesting compounds have been created and await further investigation. We believe NRT does have a potentially valuable drug pipeline to follow-up any pharmaceutical success although developmentally these compounds lag considerably behind Phenoxodiol.

OTC business

NRT's major revenue generator remains the OTC business that involves the sale of isoflavone dietary supplements. These compounds seem destined to remain in the alternative medicine category especially following the recent JAMA Medical journal article casting doubt on their efficacy above beyond a placebo effect. While NRT is committed to pursuing this business line due partly to the pharmaceutical spin-off benefits, sales have been declining recently following a reduced marketing spend. NRT believes OTC operations are expected to be cashflow positive sometime within the next twelve months.

Valuation Issues

We have used DCF analysis in an attempt to value future drug royalty cashflows but the hit or miss nature of drug development creates a high risk / high pay-off earnings profile. We have probabilistically weighted the cashflows assuming a 25% chance of Phenoxodiol succeeding Phase II trials in 2004 and securing a licensing deal. Phenoxodiol remains the primary valuation driver with little value at this stage attributed to NRT's OTC business or drug pipeline. With \$34M in cash as at Dec 2002 we believe NRT remains sufficiently funded for its current R&D program.

Novogen

Comment

While we have reservations regarding the earnings growth potential of NRT's OTC business model we believe the real value driver for NRT remains Phenoxodiol and NRT's pharmaceutical drug pipeline. We continue to believe in the potential of Phenoxodiol to become a block-buster cancer drug. With continued positive results, low toxicity indications and the new interest of a prestigious US research group, the commercial potential of Phenoxodiol remains enormous. However with expectations heightened and at a \$5 shareprice level, we hasten to add NRT is also now a much riskier investment especially with its current volatility fuelled by the daytraders and technical investors. Additionally the increasing US based nature of NRT shareholdings (approximately 40-50% of NRT shares are estimated to be held by US investors) makes NRT increasingly subject to the trends and vagaries of the US biotech investment market. With the US biotech market currently in an upswing this may not necessarily be a bad thing, especially as US biotechs/pharmas tend to be valued more highly in that market. Despite the considerable risks inherent in drug development we are maintaining our BUY recommendation on NRT for investor with a high appetite for risk/reward.