



MARSHALL EDWARDS INC

phenoxodiol

pivotal trial underway

NV-196

NV-143

# OVATURE pivotal trial

Sites currently being recruited for the  
pivotal Phase 3 clinical trial of phenoxodiol  
for ovarian cancer.

# NOW UNDERWAY

The OVATURE trial is a controlled, double-blind study designed to demonstrate the safety and effectiveness of phenoxodiol in combination with carboplatin compared to carboplatin alone for the treatment of ovarian cancer that has become resistant or refractory to platinum therapy. The study is double-blind, meaning that neither patients nor their physicians will know which treatment the patient is receiving.

Platinum chemotherapy drugs (cisplatin, carboplatin, oxaliplatin) are relatively simple chemical structures built around a central platinum atom. The platinum family of drugs work by attaching themselves to a cell's DNA, making it impossible for the cell to divide. The damaged DNA also is resistant to repair which then activates the cell's self-destruction mechanisms, leading to a form of cell death known as apoptosis. Platinum-based drugs have been used for close to 30 years and still remain the most effective drugs available for the treatment of ovarian cancer.

Although 80 percent of ovarian cancers initially respond well to platinum drug treatment, most ovarian cancers eventually develop resistance to platinum drugs – a resistance that typically extends to almost all other standard chemotherapies. Patients with tumors that are platinum-resistant have a poor prognosis. In the case of patients with late-stage ovarian cancer, the development of resistance to standard drugs is a major barrier to successful cancer management, with the overall five-year survival rate of new ovarian cancer patients being 45 percent, due in large part to the development of multi-drug resistance. Being able to restore sensitivity to platinum drugs would represent a major breakthrough in the management of such cancers.

In the laboratory, phenoxodiol has proven very effective at restoring sensitivity to most standard chemotoxic drugs following the development of chemoresistance. The biology of multi-drug resistance is poorly understood, but is thought to involve a number of different mechanisms, and this multiplicity of mechanisms makes highly-targeted strategies to overcome resistance less likely to succeed. The effectiveness of phenoxodiol in overcoming chemoresistance is thought to be due to phenoxodiol's ability to induce a generalized biochemical dysfunction within the tumor cell, making it more likely to disrupt a range of different resistance mechanisms.

Phenoxodiol is an investigational drug that is now being studied in a pivotal clinical trial, meaning that the data are to be collected for submission to the US Food and Drug Administration (FDA), European, and other regulatory authorities to support an application for marketing approval. The Phase 3 trial, called "OVATURE" for OVArian TUmor Response will evaluate the safety and effectiveness of phenoxodiol, in combination with carboplatin, for the treatment of ovarian, fallopian, or primary peritoneal cancer that is resistant to platinum therapy. The study, which was reviewed under the FDA's Special Protocol Assessment Program, will recruit 470 patients with these cancers in 60 sites throughout the United States, United Kingdom, Poland, Spain, the Netherlands, Belgium and Australia. Phenoxodiol has been granted "fast track" status by the FDA for this indication and for hormone-refractory prostate cancer, a designation intended to expedite the approval of drugs demonstrating the potential to address significant unmet medical needs.

The Phase 3 trial builds on the positive findings of a Phase II clinical trial conducted at Yale-New Haven Hospital (USA) and the Royal Women's Hospital (Australia), conducted in 40 women. In that trial, phenoxodiol was given in combination with cisplatin or paclitaxel to women with tumors that were resistant or refractory to platinum drugs (21 patients) or to taxane drugs (19 patients). The combination treatment was able to stabilize or produce a complete or partial tumor response over a 6-month treatment period in 76% and 74% of patients respectively; the median survival times were 62 weeks and 48 weeks respectively. No control arm (standard of care) was used in this study, but the published median survival times for patients with such late-stage ovarian cancer is between 28-40 weeks (Ann. Oncol 2004, vol. 15, page 100).

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Under U.S. law, a new drug cannot be marketed until it has been investigated in clinical trials and approved by the FDA as being safe and effective for the intended use. Statements included in this release that are not historical in nature are "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. You should be aware that our actual results could differ materially from those contained in the forward-looking statements, which are based on management's current expectations and are subject to a number of risks and uncertainties, including, but not limited to, our failure to successfully commercialize our product candidates; costs and delays in the development and/or FDA approval, or the failure to obtain such approval, of our product candidates; uncertainties in clinical trial results; our inability to maintain or enter into, and the risks resulting from our dependence upon, collaboration or contractual arrangements necessary for the development, manufacture, commercialization, marketing, sales and distribution of any products; competitive factors; our inability to protect our patents or proprietary rights and obtain necessary rights to third party patents and intellectual property to operate our business; our inability to operate our business without infringing the patents and proprietary rights of others; general economic conditions; the failure of any products to gain market acceptance; our inability to obtain any additional required financing; technological changes; government regulation; changes in industry practice; and one-time events. We do not intend to update any of these factors or to publicly announce the results of any revisions to these forward-looking statements.

# 3

## Phase 3 OVATURE clinical trial

<b>Patients</b>	<b>470 patients</b>
<b>Types of cancer</b>	<b>Ovarian, fallopian, and peritoneal resistant to platinum</b>
<b>Sites</b>	<b>60 in the US, UK, Poland, Spain, the Netherlands and Australia</b>
<b>Groups</b>	<b>Randomized, double-blind: phenoxodiol/carboplatin versus carboplatin/placebo</b>
<b>Regimen</b>	<b>400 mg phenoxodiol every 8 hours plus weekly administration of carboplatin (AUC=2)</b>

### Patient eligibility

To be eligible for the pivotal study, patients must have a tumor that has responded to a primary course of platinum drug therapy (thereby ensuring that platinum-sensitivity is capable of being restored). Tumors must also subsequently have become platinum-resistant, as evidenced by a patient showing disease progression within six months of the second or subsequent course of platinum therapy. Previous platinum therapy must have been given in the standard regimen of every three weeks (or less commonly, every two weeks). There is no limit on the number or type of previous therapies, providing that patients have had at least two courses of platinum drug therapy.

Patients also must have a platinum-free interval no greater than six months prior to enrolment. This is to ensure that restoration of sensitivity is not due to a patient's lack of use of chemotherapy drugs. With some chemotherapy drugs this type of sensitivity restoration occurs over time following cessation of drug therapy, and even though it is not yet known whether it also occurs with platinum drugs, the trial was designed to remove any such implication.

Hospital sites for trials are currently being recruited and additional sites for the study will be identified over the remainder of this calendar year. All sites are expected to be in a position to recruit patients by the end of the first quarter of 2007. Details on the sites and patient eligibility can be obtained by visiting [www.phenoxodiol.com](http://www.phenoxodiol.com). This site will be updated regularly as the trial proceeds.

### Study methods

Patients will be randomized into two treatment groups. One group will receive phenoxodiol and carboplatin, while the other will receive carboplatin and a placebo. Phenoxodiol will be administered at a dose of 400 mg every eight hours. For all patients in the OVATURE trial, carboplatin will be administered weekly to patients, rather than in the standard two- or three-weekly regimen. This is in part for ethical reasons, with a weekly 'dose-dense' regimen allowing for the possibility of response in patients taking the placebo.

### Evaluation

To measure the effectiveness of phenoxodiol in combination with carboplatin, the primary efficacy end-point will be the length of time a patient is both alive and without disease progression or worsening of her cancer, a measurement called progression-free survival. The secondary efficacy measurement will be overall patient survival. The study will also assess changes in the patient's tumor burden, the overall response rate (proportion of patients showing a partial or complete response), the time to response, the duration of the response, quality of life (based on a questionnaire), and clinical status as measured by a system called the Karnofsky score. The safety of phenoxodiol in combination with carboplatin will be evaluated based on the incidence and severity of toxicities and intolerances. Where the toxicity or intolerance cannot be adequately treated or controlled by a reduction in the dosage of the test treatment, the patient will be removed from the study.

The tumor burden will be measured on a regular basis by Computed Tomography (CT) scans, and standard guidelines, called RECIST, used to determine disease status. By RECIST, progression is defined as a minimum 20 percent increase in the longest diameter of target lesions, or the development of a new lesion. Response is defined as a minimum 30 percent decrease in the diameter of target lesions. CT scans will be conducted every two months, or more frequently when disease progression is suspected.

### Special protocol assessment and accelerated approval

Earlier this year, OVATURE completed a Special Protocol Assessment (SPA) by the FDA. This means that the FDA and Marshall Edwards have agreed that the design and planned analysis of this Phase 3 study are adequate to meet the requirements for submission of a marketing application to FDA. The SPA also provides for an interim analysis of the data to support a request for Accelerated Approval, a process by which the FDA could grant marketing approval with the condition that the study be completed to receive full approval. In the case of OVATURE, we have agreed with the FDA that an interim analysis can be conducted when 95 "events" have occurred, an event being defined as either disease progression or death.

# Phenoxodiol and prostate cancer

A potential therapeutic indication for phenoxodiol.

Marshall Edwards remains committed to the development of phenoxodiol for the treatment of prostate cancer. The results of the Phase 1/2 dose-ranging study completed last year showed that the investigational drug phenoxodiol has an important potential role to play in the treatment of this common disease. In that study, conducted in 26 men with hormone-refractory prostate cancer, phenoxodiol was able to extend significantly the time before the disease progressed in men with late-stage, hormone-refractory cancer.

The Company has postponed extending this development since the completion of that study for a number of reasons. The first has been the need to dedicate resources to the OVATURE study. It was considered prudent to conserve funds until the final cost of the OVATURE study was known, something that has only recently been clarified. A second reason has been the need to preserve drug for the OVATURE study until the size of the study was known, something that also only became apparent with the grant of the SPA by the FDA earlier this year. In preparation for the start of the next stage of development of phenoxodiol in prostate cancer, a steering committee composed of US oncologists was convened recently, and an appropriate clinical development strategy is being formulated. It is anticipated that that strategy will proceed in 2007.



1. Steering committee of US oncologists convened
2. Clinical strategy in development
3. Targeting 2007



# Purdue University research sheds light on how phenoxodiol works

## tNOX

tumour-associated  
NADH oxidase

NADH oxidase (NOX) is a protein involved in export of hydrogen ions from a cell. The tumor-specific form, tNOX, differs from the constitutive (normal) form, cNOX, by substitution of a number of the elements in the amino acid chain which forms the protein's structure.

## cNOX

constitutive (normal)  
NADH oxidase

Research conducted at Indiana's Purdue University (USA) under the direction of James Morr , Dow Distinguished Professor of Medicinal Chemistry, is proving to be of significant benefit in helping to understand how phenoxodiol, and possibly its derivatives, such as NV-196 and NV-143, work.

An intriguing question is how phenoxodiol distinguishes between a cancer and a healthy cell. Phenoxodiol and its various derivatives, such as NV-196 and NV-143, are thought to be distinctive in only targeting dysfunctional cells. That is, phenoxodiol has no known effect on cells with normal function.

Laboratory research at Purdue has focused on a family of proteins located on the surface of all cells which are responsible for several vital cell functions. One of these functions is the expulsion of waste hydrogen within the cell, and another is involvement in a cell's need to enlarge after it has divided. Both of these functions are critical to cell survival. The protein responsible for these functions is known as NOX (or NADH oxidase), so-called because it takes waste hydrogen within the cell and attaches it to NAD (nicotinamide adenosine dinucleotide) on the outside of the cell.

The Purdue team has identified at least two different forms of NOX. One form, known as cNOX (or constitutive NOX), is the normal form found on all human cells. Another form, known as tNOX (or tumor-associated NOX), is only found on cancer cells and so far has been discovered on all forms of cancer studied. tNOX differs structurally from cNOX in just a minor way, but the cancer cell is completely dependent on tNOX for function, to the extent that if it is shut down the tumor cell stops growing and dies within a matter of hours.

**Phenoxodiol specifically inhibits tNOX, but has no effect on cNOX thus explaining why phenoxodiol can be so toxic to cancer cells yet have no known ill-effects on non-cancer cells.**

On this basis, Marshall Edwards has been conducting translational research with patients involved in various phenoxodiol clinical studies to find out whether this new information on tNOX can be utilized to determine how best to use phenoxodiol in cancer patients.

The Purdue team recently presented initial data from this translational research in a conference held in Chicago. Their data came from a Phase 2 clinical trial where phenoxodiol was given as a single-agent therapy to men with late-stage prostate cancer. Professor Morr 's team analysed blood samples from 19 prostate cancer patients for tNOX levels and reported finding tNOX protein in the blood of all patients, with two separate forms of the tNOX protein present. Both forms had the same weight (75 kDa), but were slightly different, and so were termed tNOX 75  and tNOX 75 . The levels of both forms correlated well with the clinical response to phenoxodiol. That is, tNOX 75 /  levels fell when there was an apparent clinical response to phenoxodiol, and rose when there was eventual disease progression.

One of the opportunities that tNOX offers is the possibility that different cancer types are associated with different forms of the tNOX protein. The Purdue research showed that tNOX 75 /  is not found in patients with other common forms of cancer (lung, breast, ovarian, colon), suggesting that tNOX 75  in particular may represent a prostate cancer-specific tNOX protein. Other studies conducted by Morr 's group have shown that phenoxodiol interacts differently with different forms of tNOX, inhibiting some types in a dramatic fashion, and having less effect on others. If it proves possible to link a particular cancer type to a particular form (or forms) of tNOX, and laboratory tests can determine which tNOX forms are most responsive to different Marshall Edwards anti-cancer drugs, then it may prove possible to identify the most appropriate therapeutic indications for each drug.

# A promising therapeutic target for phenoxodiol

Preliminary results of a Phase 1 study show that the oral form of phenoxodiol accumulates in cervical tumors.

Early results from a clinical trial at Yale-New Haven Hospital conducted with 14 women, show that the investigational drug phenoxodiol accumulates within cervical tumors, and this may be associated with a reduction in tumor growth.

One of the principal objectives of this Phase 1b dose-ranging study was to provide evidence that the oral dosage form of phenoxodiol was firstly capable of delivering the drug to the tumor and secondly to explore the anti-cancer effect.

Patients selected for the study had cervical cancer that was suitable for surgical resection, where it was possible to obtain samples of cancer tissue both at the start and at the completion of the study for an accurate measurement of the tumor burden. Phenoxodiol was administered from the time of diagnosis until the time of surgery, a period of 4 weeks.

Phenoxodiol was given orally every 8 hours in one of three doses (50, 200, or 400 mg). Results for the lower dosage levels (50 and 200 mg) are now available. As at October 2006 an additional 3 patients still need to be recruited to complete results at the 400 mg level.

The first observation is that phenoxodiol does accumulate in tumor tissue (Table 1), confirming the bio-availability of the oral dosage form as an appropriate anti-cancer therapy.

The second important observation was an unexpected potential anti-cancer effect – unexpected because of the relatively short period of treatment (4 weeks), combined with the generally aggressive nature of this type of cancer.

No toxicities or intolerances were determined to be associated with the phenoxodiol treatment.

Disease progression was determined by Computed Tomography (CT) scans, and RECIST guidelines used to evaluate any change in tumor burden. Disease progression was determined to have occurred in only 1 of the 14 patients, with the other 13 patients having stabilized disease (Table 2). Unexpectedly, 2 of these 13 patients showed a 17 percent decrease in tumor diameter. Decrease in tumor size and absence of disease progression is highly encouraging, and supports the view that cancer of the cervix, vagina and vulva is an appropriate therapeutic indication for further investigation for phenoxodiol.

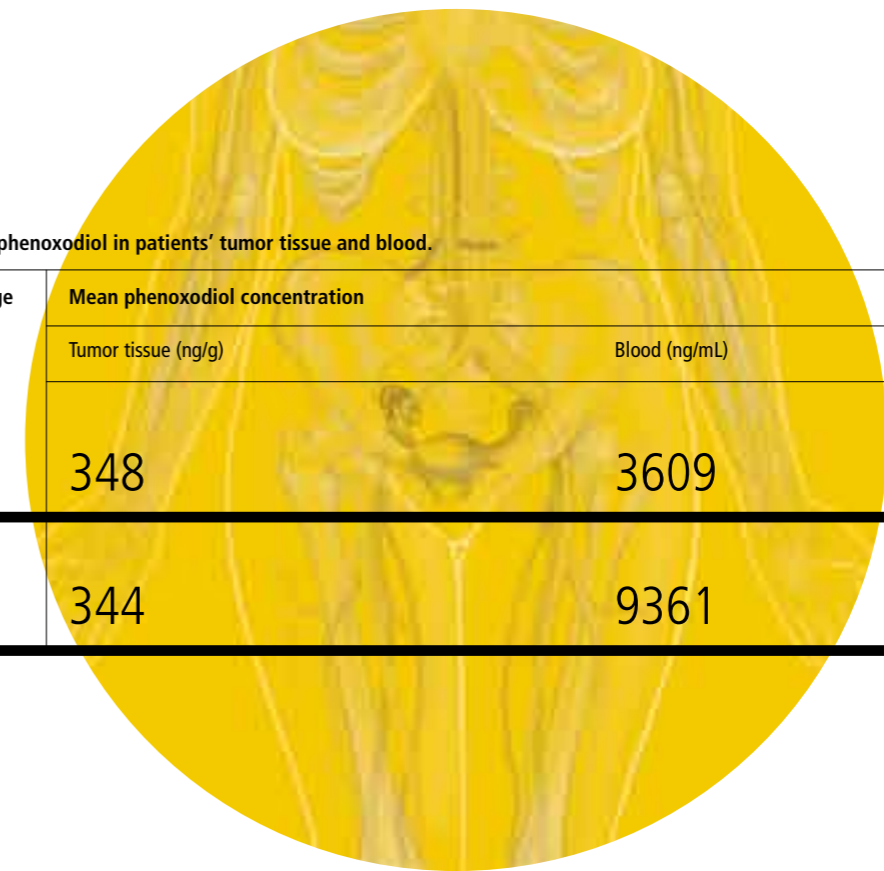


Table 1. Concentration of phenoxodiol in patients' tumor tissue and blood.

Oral phenoxodiol dosage	Mean phenoxodiol concentration	
	Tumor tissue (ng/g)	Blood (ng/mL)
50 mg	348	3609
200 mg	344	9361

Table 2. Tumor size and disease progression after 4 weeks of phenoxodiol therapy.

Oral phenoxodiol dosage	Tumor size			
	10-20% decrease	-9 to + 9%	10-19% increase	≥ 20% increase
50 mg	0	4	1	1
200 mg	2*	3	3	0

\* These patients showed an average of 17% decrease in the longest diameter of the tumor.

No disease progression = 13 patients

Disease progression = 1 patient

Marshall Edwards has established pre-clinical programs in the United States, United Kingdom, and Australia for NV-196 and NV-143, and a clinical program in Australia for NV-196, to study these two latest candidate drugs. These investigational drugs are being tested as chemosensitizers against melanoma, pancreatic cancers, and bile duct cancer – all aggressive forms of cancer with limited therapeutic options.

NV-196 is a derivative of phenoxodiol, and NV-143 is a derivative of NV-196. In fact, NV-196 is a pro-drug of NV-143, meaning that patients dosed with NV-196 end up with both NV-196 and NV-143 in their blood.

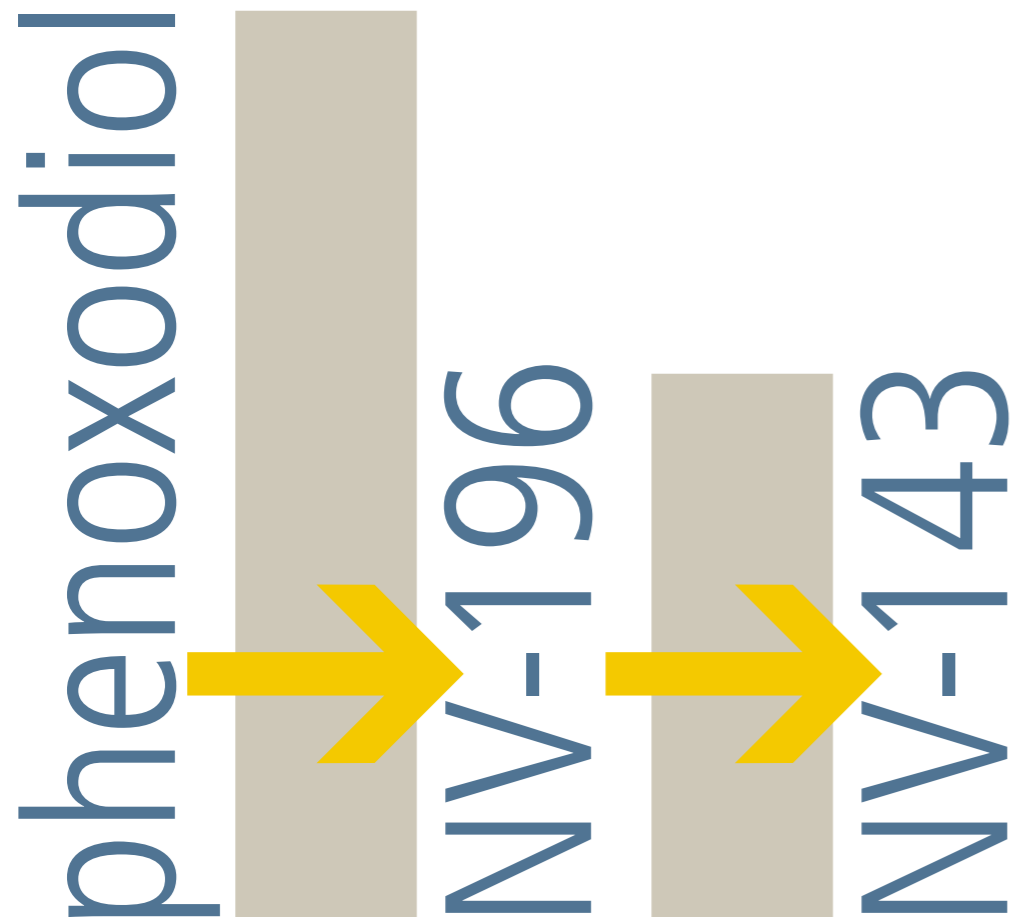
The difference between the three drugs is that minor variations in their structure have led to considerable changes in the types of tumors that are most sensitive to each drug. NV-196 and NV-143 are particularly cytotoxic to melanoma, pancreatic adenocarcinoma and cholangiocarcinoma (bile duct cancer) tumor types in laboratory testing.

Laboratory studies of both NV-196 and NV-143 support that they are potent chemo-sensitizers. In the same way that phenoxodiol has been shown to chemosensitize tumor cells to most standard chemo-toxic drugs, so do NV-196 and NV-143.

NV-196 has entered its clinical phase. A Phase 1a study was conducted in Australia with 3 patients that compared the oral and intravenous dosage forms of NV-196. That study confirmed that the oral dosage form of NV-196 potentially could produce target levels of drug in the bloodstream and was without toxicity following a single dose. NV-196 is now undergoing its second Phase 1a study in Australia involving 12 cancer patients to test the safety and pharmacokinetic profile of NV-196 after repeated oral dosing. To date, the drug has proven to be well tolerated, although this needs to be tested in considerably more patients before it can be certain that the drug has the same high safety profile as phenoxodiol as shown.

It is anticipated that an Investigational New Drug (IND) application will be submitted by the Company to the FDA in 2007, to conduct a Phase 1b study in the US that will provide further data on safety and preliminary data on efficacy. Clinical development has commenced with NV-196 because its pro-drug effect means that patients ultimately may derive the benefit of both NV-196 and NV-143. However, NV-143 will continue to be studied as a drug in its own right because in laboratory studies it has shown greater biological potency against some cancers than NV-196. NV-143 is planned to be in Phase 1 trials in 2007.

**Clinical program underway for melanoma, pancreatic cancer and bile duct cancer.**



**Melanoma**

Melanoma continues to be one of the deadliest cancers with an overall five-year survival rate of less than 16 percent. Intervention strategies for metastatic melanoma remain limited due to its relative resistance to standard chemotherapy, its high metastatic potential, and somewhat early spread through the lymphatic and circulatory systems.

Results of randomized clinical trials using single or combination chemotherapy drugs as systemic therapies remain disappointing, with no strategy thus far having significant impact on survival. Since no approved standard of care exists for the treatment of metastatic melanoma, appropriate therapy of malignant melanoma remains an area of significant unmet clinical need where novel treatment approaches are urgently required.

Both NV-196 and NV-143 have been tested *in vitro* and, in these studies, have been shown to be effective in killing melanoma cells, where standard drugs have little or no effect. NV-196 and NV-143 have also been tested for their ability to deliver an anti-tumor effect *in vivo* through immunologically defective mice bearing a human melanoma cell line (either MM200 or Me1-RM). In that study, NV-196 reduced terminal tumor burden by up to 62 percent (see Table 3 and Figure 1).

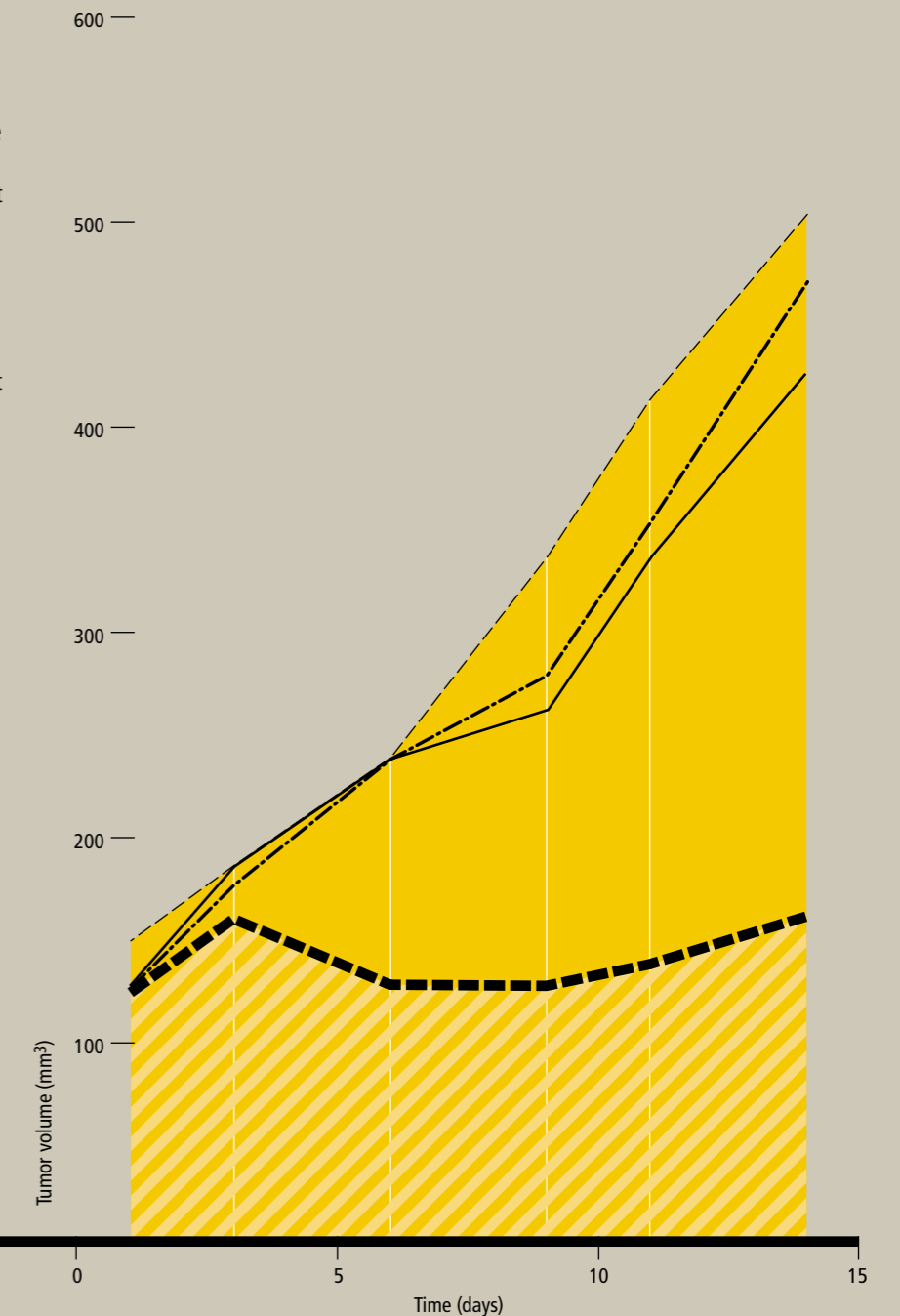
The ability of NV-196 and NV-143 to chemosensitize melanoma cells for standard-of-care chemotherapeutic drugs also has been studied in the laboratory, and data from these studies suggest that both drugs act as potent chemosensitizers to widely used drugs such as carboplatin and cisplatin. Current pre-clinical studies in mice being conducted in the United States are focusing on determining the optimum combination of NV-196 or NV-143 and standard chemotherapy drugs for melanoma therapy.

**Table 3. Tumor reduction in mice carrying human melanoma cells and treated with NV-196.**

Melanoma cell line	Reduction in terminal tumor burden	
	NV-196 dose 100 mg/kg	NV-196 dose 50mg/kg
MM200	62%	31%
Me1-RM	44%	25%

Percentages shown are for treated versus control (untreated) mice.

**Figure 1. Use of NV-196 helped generate significant reduction in melanoma tumor growth, indicating successful chemosensitization. Most importantly, this combination effect was achieved without exacerbation of gemcitabine toxicity.**



### Pancreatic Adenocarcinoma

Rarely developing before the age of 50, pancreatic adenocarcinoma is the fourth leading cause of cancer death in the United States. On average, the five-year survival rate for this cancer is less than 5 percent. In the United States alone, an estimated 33,730 new cases of pancreatic adenocarcinoma are expected in 2006.

Once diagnosed, only about 10 to 15 percent of pancreatic tumors can be removed surgically. Those that cannot be removed surgically are treated with chemotherapy, generally using gemcitabine or 5-fluorouracil – two of the standard chemotherapeutic drugs used to treat the disease. However, chemotherapy generally is disappointingly ineffective and the treatment of inoperable pancreatic cancer therapy remains an area of significant unmet clinical need.

Both NV-196 and NV-143 have been shown to be potent killers of pancreatic cells in the laboratory. At this time, Marshall Edwards considers NV-196 the preferred drug candidate for development as a treatment for pancreatic adenocarcinoma. Early data support that NV-196, when used in combination with gemcitabine, potentially sensitizes pancreatic cancer cells (see Figure 2). Initial studies further suggest that a 24 hour pre-treatment of cells with NV-196 may provide optimal sensitization of pancreatic cancer cells to the chemotoxic effects of gemcitabine. Further studies are currently underway at the University of Alabama in Birmingham.

### Bile Duct Cancer

Cholangiocarcinoma, or cancer of the bile duct, is a rare, slow-growing, and late metastasizing cancer. It affects approximately 2 out of 100,000 people in the United States, predominately individuals over 65. Approximately 4,000 cases are diagnosed each year in the United States alone.

Cancer of the bile duct is usually diagnosed at a late stage and is associated with poor survival rates. Disease progression can result in metastasis to other organs, liver failure, and infections. Surgical removal of the tumor is the optimal therapy. However, in the majority of cases where surgery is not possible and the tumor has spread outside the biliary tree, standard chemotherapy and/or radiation therapy generally proves to be palliative offering relief but no cure.

NV-196 and NV-143 are being studied to evaluate their ability to chemosensitize cholangiocarcinoma cells to gemcitabine (see Figure 3). Pre-clinical studies at the University of Alabama in Birmingham are underway to test the effectiveness of these drugs *in vivo*. Mice bearing cholangiocarcinoma will be treated with NV-196 and NV-143 in combination with drugs such as gemcitabine, 5-fluorouracil, and cisplatin to determine their effect in tumor growth.

### NV-196 / NV-143 versus phenoxodiol

The drug candidates NV-196 and NV-143 seem to differ from phenoxodiol in the way they affect a cell's self-destruction mechanism (apoptosis) through death receptors. There are two main families of death receptors located on the surface of a cell, the Fas and TRAIL-2 receptors. These receptors are the two principal families of death receptors through which a healthy cell eventually receives signals to self-destruct. Self-destruction is a normal process in the cell's cycle to remove itself from circulation. A tumor cell, on the other hand, blocks this process of self-destruction and keeps on dividing.

Both phenoxodiol and NV-196 work on the Fas and TRAIL-2 pathways, but phenoxodiol appears to act mostly through the Fas receptors while NV-196 and NV-143 appear to act principally through the TRAIL-2 receptors. It is believed that melanoma, cholangiocarcinoma, and pancreatic tumor cells particularly involve the TRAIL-2 receptors.

Laboratory studies suggest that this group of tumor types can be killed more effectively by NV-196/ NV-143 than by phenoxodiol, making these tumor types potential therapeutic targets for NV-196 and NV-143. However it is likely that neither NV-196 nor NV-143 will be used as single-agent therapies in these aggressive cancers. Rather, it is far more likely that they will be used as chemosensitizers for standard chemotoxic drugs such as gemcitabine and cisplatin.

Figure 2. Percent of pancreatic cancer cells dying by using a variety of combinations of NV-196 and Gemcitabine.

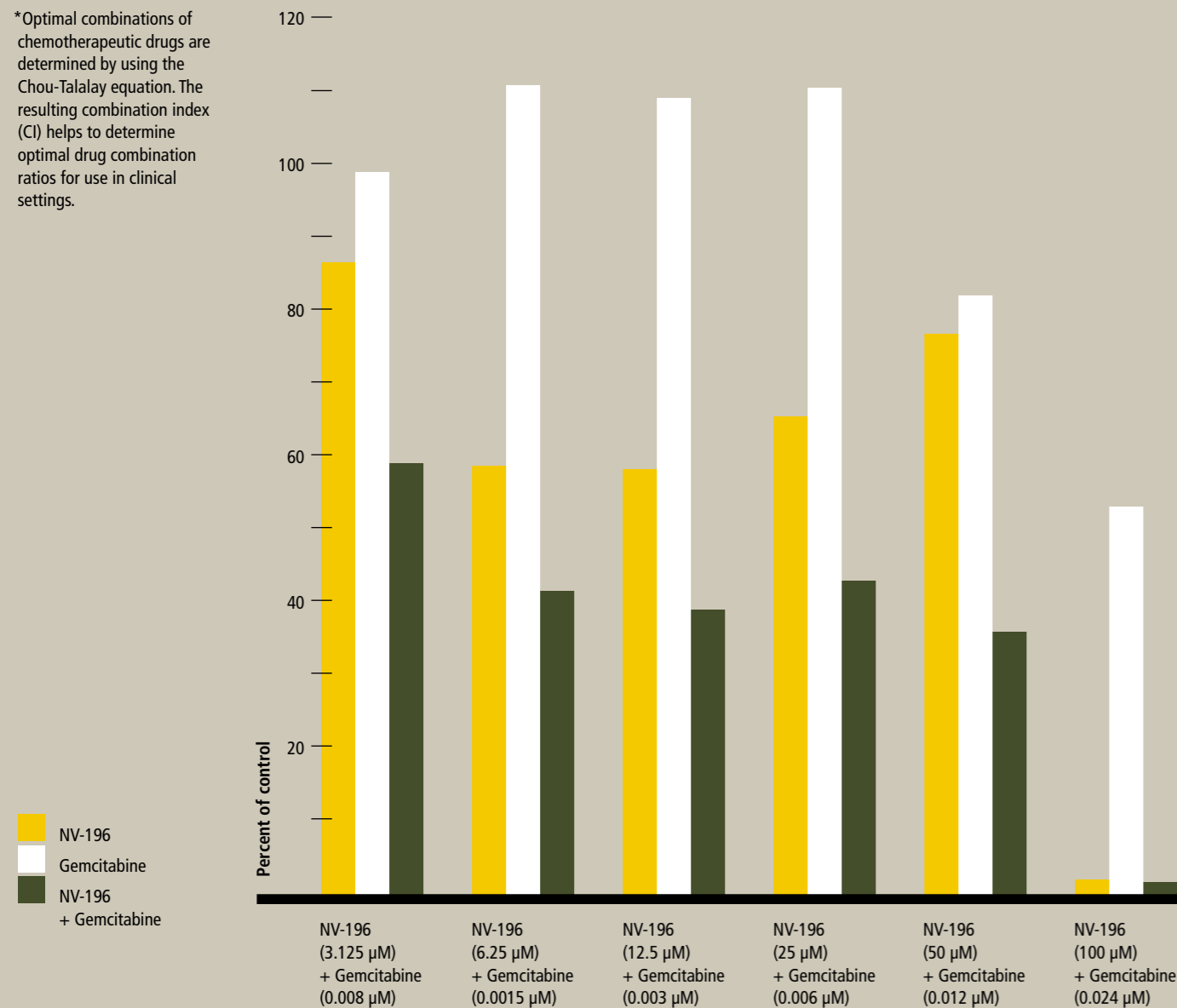
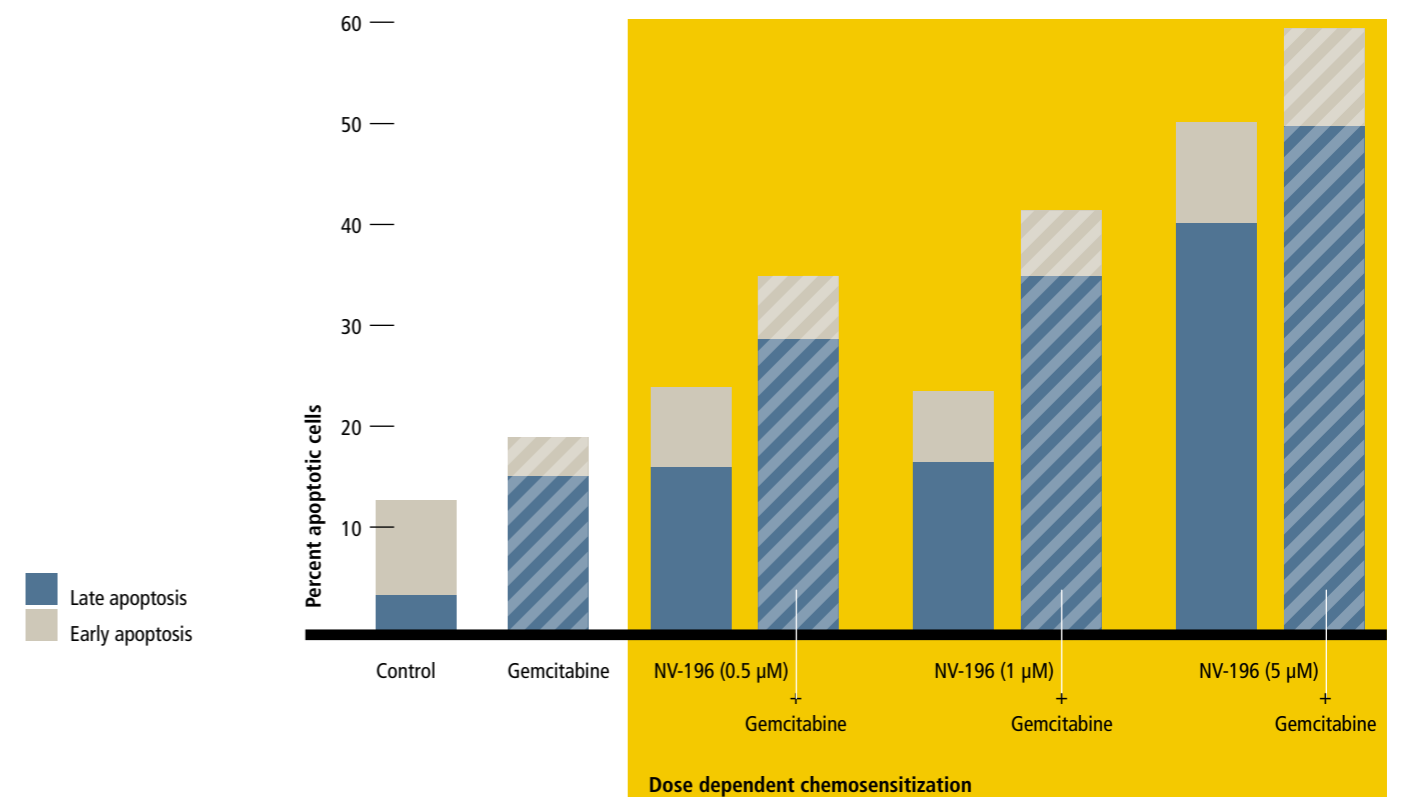


Figure 3. Percent of bile duct cancer cells dying when using NV-196 in laboratory studies.



# NV-196 / NV-143 and radiation therapy

**In addition to their chemo-sensitizing activity, NV-196 and NV-143 have promising activity as a sensitizer for radiation therapy.**

Radiation is used broadly as a treatment for many cancer types and remains a cornerstone of cancer therapy. As with many cancer therapies, radiotherapy is non-selective, often damaging healthy cells surrounding the cancer. Because of this, there sometimes is a limit to the number of doses of radiation that can be administered to a cancer patient. For some types of cancers, such as cancer of the brain, lung, or head & neck, radiotherapy can be restricted to a single daily exposure. Limiting the number of exposures can affect the ability of health professionals to treat cancer.

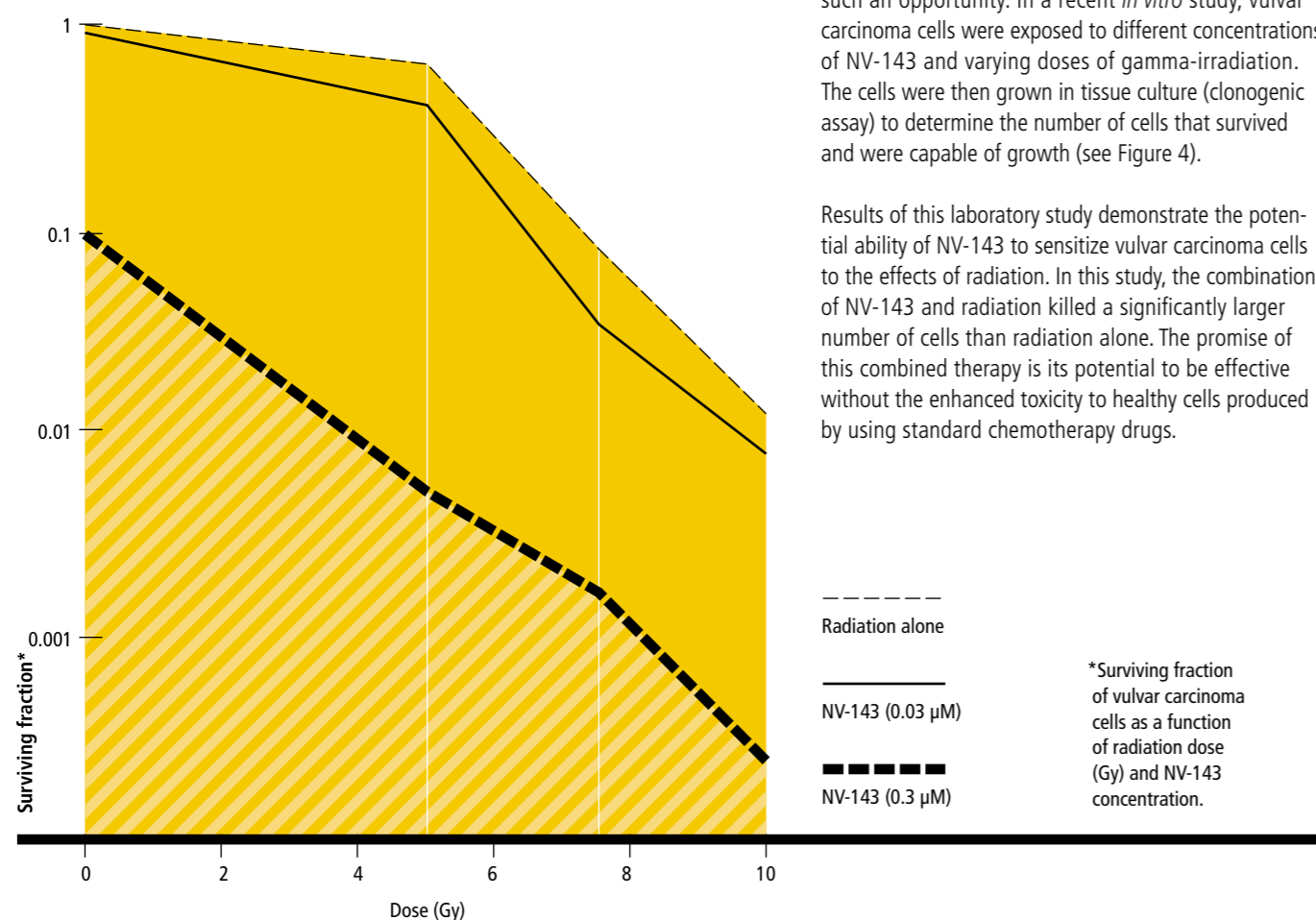
A number of strategies have been developed to increase the effectiveness of each dose of radiation delivered. The only strategy thus far that has yielded appreciable benefit is the combination of radiotherapy and chemotherapy. For a number of different types of cancer, damage inflicted to the tumor cells by using chemotherapy provides a more durable radiotherapy effect. However, most types of chemotherapies are also non-selective and, while its use allows for more doses of potent radiotherapy, healthy cells are also impacted by the toxicity of both therapies.

A better approach would be to use chemotherapeutic drugs that would only affect tumor cells, making these more susceptible to the toxic effects of radiation while reducing toxicity to healthy cells. This would lead not only to more aggressive radiation schedules but also to decreased side effects associated with cancer therapy.

NV-196 and its derivative, NV-143, seem to offer such an opportunity. In a recent *in vitro* study, vulvar carcinoma cells were exposed to different concentrations of NV-143 and varying doses of gamma-irradiation. The cells were then grown in tissue culture (clonogenic assay) to determine the number of cells that survived and were capable of growth (see Figure 4).

Results of this laboratory study demonstrate the potential ability of NV-143 to sensitize vulvar carcinoma cells to the effects of radiation. In this study, the combination of NV-143 and radiation killed a significantly larger number of cells than radiation alone. The promise of this combined therapy is its potential to be effective without the enhanced toxicity to healthy cells produced by using standard chemotherapy drugs.

**Figure 4. Using NV-143 in combination with radiation therapy decreases the number of cancer cells surviving when compared to radiation alone.**



Patricia A Rossi Pharm. D has joined Marshall Edwards as the Vice President of Clinical Operations. Dr Rossi's primary responsibility is to oversee the OVATURE Trials as well as any new clinical trials that may come up in the US.

Prior to joining Marshall Edwards, Dr Rossi served as Medical Science Liaison at Onyx Pharmaceuticals and Regional Medical Liaison and Clinical Oncology Manager at Sanofi-Aventis Pharmaceuticals-Oncology. She has also managed an oncology pharmaceutical sales team for Bristol-Myers Squibb Oncology.

Dr Rossi began her career as a pharmacist, eventually narrowing her specialty to oncology pharmacist. She holds a B.S. in Pharmacy from Massachusetts College of Pharmacy & Allied Health Sciences and most recently completed the school's Non-Traditional Pharm D. Program (NTPD). Dr Rossi brings a wealth of knowledge from the oncology pharmaceutical community and will play an important role in Marshall Edwards' clinical trials program in the US.

Marshall Edwards has established a New York City office which now facilitates inter-company meetings at a convenient and central New York location.

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