

FUTURE ONCOLOGY

TECHNOLOGY, PRODUCTS, MARKETS AND SERVICE OPPORTUNITIES

A NEW MEDICINE PUBLICATION

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MEETING COVERAGE

ADVANCES IN THE TREATMENT OF PROSTATE CANCER

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**RECENT DEVELOPMENTS IN
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DENVER, CO, JUNE 3-6, 1996

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**NEW DEVELOPMENTS IN THE
TREATMENT OF AIDS-ASSOCIATED
KAPOSÍ'S SARCOMA**

FROM THE XI INTERNATIONAL AIDS
CONFERENCE, VANCOUVER, BC, CANADA
JULY 7-12, 1996

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**ONCOLOGY KNOWLEDGEbase and
ONCOLOGY DRUGS DATABASE**

NEW MEDICINE has designed and plans to maintain an in-depth information capability in the oncology field. This body of knowledge incorporates data from every aspect of oncology and is organized to give the user maximum flexibility in viewing data by category.

In the **ONCOLOGY DRUGS DATABASE** agents are listed by generic and brand name and number, by developer and affiliate (including a detailed description of the type of affiliation), by various other criteria (drug type, drug class, etc.), by mechanism, technology and indication. Also, the database identifies the targets of the agents in development and the indication. The status of each agent is listed by indication and a preclinical and clinical history is presented by indication, where appropriate. A hard copy version of the **ONCOLOGY DRUGS DATABASE** is expected to be release by the middle of September 1997. In the meantime, our first product, a report on cancer vaccines (see blurb on page 6) is being released in June 1997.

The **ONCOLOGY KNOWLEDGEbase**, which is still under development, when completed, will incorporate information on all aspects of oncology, including new drugs in development (described above), detailed descriptions of mechanisms of malignancy, anti-cancer drug targets and types, technologies, indications (including extensive epidemiology and current therapy) and profiles of companies and academic institutions involved in this area, as well as delivery of services. Information is being gleaned from a variety of sources, including company releases, journal articles, meeting attendance, review of abstracts and personal communications. The **ONCOLOGY KNOWLEDGEbase** is expected to be formally released in early 1998 and maintained by **NEW MEDICINE** on an ongoing basis. To request a sample entry from this database, please use the order form on page eleven of this brochure.

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SCIENTIFIC RETREAT**

INCLINE VILLAGE AT LAKE TAHOE, CA
SEPTEMBER 5-8, 1996

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MANAGEMENT OF BREAST CANCER

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NOVEMBER 14-16, 1996, SAN DIEGO, CA

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CANCER VACCINES: TECHNOLOGY, PRODUCTS,
MARKETS AND BUSINESS OPPORTUNITIES

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Increased understanding of the immune system coupled with genetic engineering and other cutting-edge technologies, is encouraging the development of a new generation of vaccines using diverse approaches. A new round of prototype tumor vaccines is expected to advance in clinical trials in the next two to three years. Some vaccines represent a broad-based approach, attempting to trigger the whole immune system, while others are directed at specific targets. If successful, cancer vaccines will first be used therapeutically, to boost the immune response to cancer in patients already afflicted. A vaccine that would actually prevent cancer in high-risk individuals will be the next step, although this is probably years away. **NEW MEDICINE** has just released a cancer vaccine report providing an in-depth analysis of the cancer vaccine sector based on **NEW MEDICINE'S ONCOLOGY KNOWLEDGEbase**. (see page 5). This report provides a comprehensive analysis of the cancer vaccine sector in terms of: **basic science** (tumorigenesis, oncogenes, tumor-suppressor genes, mitogenic growth factors and growth inhibitory factors, viral causes, apoptosis, immune response, tumor antigens, immune surveillance); **technology** (antiviral vaccines against cancer, nonspecific and specific active immunotherapy, whole tumor cell vaccines, gene transfer, protein antigens, adoptive immunotherapy, activated killer cells, tumor-infiltrating lymphocytes, passive immunotherapy, adjuvants); **indications and epidemiology** (worldwide incidence by disease severity and survival and mortality statistics for major cancers); **products under development** (a comprehensive database of over 160 cancer vaccines in development worldwide, including data on developer/affiliate, technology and clinical status); **market opportunities worldwide** (by indication based on candidate populations and suggested treatment costs); **and developer profiles** (over 60 companies).

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THE U.S. MARKET FOR DIAGNOSTIC RADIOPHARMACEUTICALS

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- Detailed descriptions of putative mechanisms of carcinogenesis
- In-depth discussions of product development strategies
- Attendance and coverage of over 30 meetings in the cancer and related fields

FUTURE ONCOLOGY SEPTEMBER 1995 VOLUME 1, NUMBER 5

Exhibit 7
Combination Approaches in Clinical Trials Against MDR Cancers

MDR-reversing Agent	Chemotherapeutic Agent	Status/Location/Indication
SDZ PSC 833 (5 mg/kg, PO qd)	Fluorouracil (80-80 mg/m ² , IV)	Phase I USA solid tumors (ASCOCS, Abs.)
SDZ PSC 833 (12.5 mg/kg PO q 12 hours for 8 days)	Vinorelbine (1.25 mg/m ² , IV qd)	
SDZ PSC 833 (4 mg/kg q 8 hours 8 times) (750 µg)	Doxorubicin (1.2 mg/m ² , IV infusion)	
SDZ PSC 833 (5 mg/kg q 6 hours or 20 mg/kg/d)	Etoposide (1.2 mg/m ² , IV infusion)	
S 9788 (escalating continuous IV infusion of 100, 200, 300, 400, 480 mg over 6 hours)	Doxorubicin (1.2 mg/m ² , IV infusion)	
S 9788 (MTD was 96-104 mg/m ² as a 30 minute IV infusion)	Doxorubicin (1.2 mg/m ² , IV infusion)	
VX-710	Facilin	
VX-710	Doxorubicin	
U.S. R. boronic acid sulfonamide (BSO)	Melphalan (10 mg/m ² , IV infusion)	
0.75 g/m ² x 24 to 1.5 g/m ² x 48 (Continuous infusion)	Doxorubicin (1.2 mg/m ² , IV infusion)	
Deoxyglatirone (oral)	Doxorubicin	
Mitomycin (escalating, starting at 4 gm, 5 gm and 6 gm, PO, q week 3 hours prior to vinorelbine)	Vinorelbine (1.25 mg/m ² , IV qd)	
IFN-α2b (escalating dose from 0.5 mg/m ² to 1 mg/m ² on days 5-9) + hydroxyurea (500 mg q 8 hours, days 5-9) + tamoxifen (40 mg/m ² , days 1-10) + streptozocin (500 mg/m ² , days 6-9)	BCNU (100 mg/m ² , IV infusion)	
Intracellular histamine antagonist N, N-dimethyl-2-(4-glyoxybutyl)pyrrolidine (the pro-drug of histamine H1 receptor antagonist) (oral)	Various	
L-verapamil (125 mg/m ² PO q 4 hours beginning 24 hours before and continuing for 24 hours after paclitaxel infusion)	Paclitaxel (175 mg/m ² , IV infusion)	
Docetaxel (240-1200 mg/m ² /day) (1.6 µg/kg counting cycle)	Etoposide (1.2 mg/m ² , IV infusion)	
Docetaxel (2000 mg/d)	Vinorelbine (1.25 mg/m ² , IV qd)	
Docetaxel (begin 18 hours before day 1 of vinorelbine administration and given orally every 8 hours (either as a 120 mg/m ² dose or a 180 mg/m ² dose plus dexamethasone) for 12 doses)	Vinorelbine (1.25 mg/m ² , IV qd)	
Etoposide (16 mg/m ² for 96 hours continuous infusion)	Docetaxel (1.6 µg/kg counting cycle)	

FUTURE ONCOLOGY AUGUST 1995 VOLUME 1, NUMBER 4

Exhibit 2
Lung Cancer Incidence and Mortality by Gender in Selected Countries Worldwide in 1995

Country	Death Rate			Incidence Rate			
	Male	Female	Total	Male	Female	Total	
Group 1							
UK	99.7	44.1	71.3	41.47	105.7	52.9	78.8
Germany	78.0	18.2	47.3	38.426	82.7	21.8	51.4
Italy	101.7	16.6	58.0	33.374	107.8	19.9	62.6
France	80.1	12.2	50.2	28.992	95.3	14.8	54.1
Spain	76.0	7.3	41.1	18.145	80.6	8.8	44.1
Holland	100.9	17.4	58.7	9.105	107.0	20.9	63.5
Belgium	128.2	15.6	70.8	7.099	135.9	18.7	76.1
Greece	88.1	14.7	56.8	5.212	93.4	17.6	54.9
Denmark	82.8	46.5	64.4	3.345	87.8	55.8	71.6
Portugal	47.2	9.9	27.9	2.759	50.0	11.9	30.3
Ireland	63.4	28.6	46.0	1.395	67.2	34.3	50.7
Switzerland	89.1	20.1	53.8	187.059	94.4	24.1	58.4
Group 2							
Austria	72.1	21.5	45.9	3.608	76.4	25.8	50.2
Sweden	45.9	21.3	33.5	2.977	48.7	25.6	37.0
Switzerland	71.6	13.8	42.2	2.933	75.9	16.6	45.7
Finland	64.5	14.9	39.0	1.970	68.4	17.9	42.4
Norway	53.2	20.2	36.5	1.591	56.4	24.2	42.2
Subtotal	60.1	18.3	38.8	13.039	63.7	22.0	42.4
Group 3							
Poland	90.3	16.8	32.6	20.387	95.7	20.2	57.0
Yugoslavia (old)	67.7	12.3	39.7	9.376	71.8	14.8	43.0
Czech Republic	100.1	15.8	56.9	9.022	106.1	19.0	61.4
Hungary	125.8	30.6	76.3	7.994	133.3	36.7	83.1
Romania	55.4	10.7	32.8	7.705	58.7	12.8	35.5
Bulgaria	64.6	12.5	38.1	3.382	68.3	15.0	41.2
Subtotal	81.4	15.5	47.8	98.077	86.2	18.8	62.908
Group 4							
Old USSR	65.4	7.2	34.7	99.147	69.3	8.6	37.3
Group 5							
USA	74.1	40.0	59.8	157.400	74.6	54.8	64.6
Group 6							
Japan	49.0	17.2	32.8	40.563	51.9	20.6	36.0
Canada	77.2	31.9	54.2	15.739	81.8	28.3	59.8
Argentina	48.9	8.3	27.2	9.871	49.7	10.0	29.4
Australia	60.3	19.5	39.8	6.212	63.9	23.4	43.6
Cuba	49.8	18.3	34.2	3.328	52.8	22.0	37.5
Hong Kong	62.1	31.6	47.1	2.603	63.8	37.9	32.1
Chile	17.6	4.5	12.0	1.582	18.7	7.8	13.1
New Zealand	57.6	25.1	41.2	1.362	61.1	30.1	45.4
Uruguay	83.8	7.3	44.6	1.317	88.8	8.8	47.8
Singapore	42.2	16.3	29.4	796	44.7	19.6	32.3
Israel	27.8	10.7	19.2	776	29.5	12.8	21.1
Costa Rica	11.1	5.5	8.3	201	11.8	6.6	9.2

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ONCOLOGY KNOWLEDGEbase & ONCOLOGY DRUGS DATABASE

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ONCOLOGY DRUG DATABASE

PRODUCT DESIGNATION	
Generic Name	MAb B43.13
Brand Name	Ovarex
Description	Anti-idiotypic MAb that binds CA 125-expressing tumor cells and elicits an immune response via generation of autologous antigen mimics.
PRODUCT SOURCE	
Primary Developer	AltaRx
Affiliate(s)	Bionira, Medac GmbH, MerckFrosst Canada
Description	Pursuant to an agreement entered in November 1995, Bionira out-licensed its antibody MAb B43.13 to AltaRx to be incorporated into the Ovarex vaccine. AltaRx paid an upfront licensing fee and will make royalty payments on any profits from net sales. In August 1996, AltaRx and Medac entered a strategic partnership. In return of Western European marketing rights for Ovarex for ovarian cancer, Medac is obligated to fund European clinical trials and product registration fees. Medac has also agreed to purchase Ovarex from AltaRx at specifically agreed upon transfer prices. MerckFrosst Canada manufactures Ovarex for AltaRx.
PRODUCT SPECIFICATIONS	
Therapeutic Indication	Malignancy
Therapeutic Category	
Drug Category	
Drug Class/Type	
Technology	
Mechanism	
Target	
Administration Route	
Cancer Indication	
CLINICAL STATUS BY IND	
Indication	
Latest Status	
Clinical History	
MARKET STATUS	
Drug Status	
Comments	

BRIANA BIO-TECH

BRIANA BIO-TECH (Edmonton, Ontario, Canada) is a biopharmaceutical company focused on the commercial development of therapeutics and diagnostics for treating cancer and neurological disorders. In return of exclusive worldwide distribution rights to the technology stemming from research conducted by Dr. Lung-Chang's team at the University of Alberta, Briana Bio-Tech entered a three-year funding agreement to support clinical trials and ongoing research and development for the technology. The University of Alberta received an initial payment of (Cdn) \$200,000 and anticipates (Cdn) \$300,000 to fund the first year of research. Briana Bio-Tech plans to complete a private placement by July 1997 to raise an additional (Cdn) \$8 million.

Dr. Chang is developing an immunogenic cancer therapy to induce an enhanced immune response that will be entering phase I clinical trials in June 1997 in 5 advanced brain cancer and 5 melanoma patients at the University Hospital in Edmonton. Immunogenic therapy combines two genes, one of which is B7-2 that has never been tested in cancer clinical trials. The vaccine may have potential application in other tumors such as breast cancer. Briana Bio-Tech is actively pursuing other strategic alliances and collaborations in oncology and neurology.

AFFILIATIONS			
University of Alberta	Briana Bio-Tech has licensed the research and is funding the clinical trials and the ongoing research and development for this promising technology for at least the next three years. Briana Bio-Tech obtained an exclusive worldwide distribution rights to immunogenic therapy.		
IMMUNOTHERAPEUTIC/VACCINE PIPELINE			
Generic Name & Number & Brand Name	Affiliations	Class & Type & Target & Mechanism	Clinical Status
Immunogenic therapy	University of Alberta	Immunomodulator	Phase I (06/97)-Canada & advanced brain cancer, malignant melanoma