HARNESSING THE IMMUNE SYSTEM TO TREAT AND PREVENT DISEASE

JANUARY 2014

CSE/OMX: BAVA, OTC: BVNRY
BAVARIAN NORDIC IN BRIEF

• First vaccine approved in 2013
• Two Phase 3 programs:
  • Prostate cancer and smallpox
• Pipeline drawing from two distinct technology platforms
• Commercial scale cGMP manufacturing facility
• Long-term R&D and delivery contracts with the US government
• Revenue-generating

FACTS

Founded 1994, IPO 1998
Listed on NASDAQ OMX Copenhagen: BAVA
26m shares outstanding/~28.2m fully diluted
Market Cap DKK 2.6bn / USD 480m
OUR BUSINESS

CANCER IMMUNOTHERAPY

• Pipeline addressing unmet needs in major cancers

• Lead product: PROSTVAC (prostate cancer)
  • Encouraging survival results in Phase 2
  • Phase 3 ongoing

• Poxviral vector technology provides broad immunotherapy platform

INFECTIONOUS DISEASES

• Pipeline in biodefense and commercial vaccines

• Lead product: IMVAMUNE/IMVANEX
  • Approved in EU and Canada
  • Phase 3 ongoing in the USA

• Significant revenues from ongoing vaccine deliveries to the U.S. government (USG)

GROWTH STRATEGY

Advance product portfolio in both therapeutic areas
Multiple products in clinical development
Strategic partnerships

FINANCIAL STRATEGY

Building toward sustainable profitability
RECENT HIGHLIGHTS

✓ IMVANEX®/IMVAMUNE® (Smallpox vaccine) approved in Europe and Canada - first product approval for the company

✓ Received new contract valued up to USD 228 million from the U.S. Government for the continued production and deliveries of IMVAMUNE

✓ PROSPECT Phase 3 study expanded to over 170 sites and 13 countries.

✓ Expansion of large scale manufacturing facility to include production of PROSTVAC

✓ Continued improvement of efficiency in manufacturing of IMVANEX/IMVAMUNE

✓ CV-301 prioritized for clinical development in colorectal cancer based on the promising clinical Phase 2 study results

✓ Addition of Dr. Jim Breitmeyer (Cadence Pharmaceuticals, Lilly, Serono) as President of Cancer Immunotherapy division and Executive Vice President
## Pipeline

### Infectious Diseases

<table>
<thead>
<tr>
<th>Disease</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 1/2</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smallpox</td>
<td>IMVANEX®/ IMVAMUNE®</td>
<td></td>
<td></td>
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<tr>
<td>Smallpox</td>
<td>IMVAMUNE® freeze-dried</td>
<td></td>
<td></td>
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<tr>
<td>Anthrax</td>
<td>MVA-BN® Anthrax</td>
<td></td>
<td></td>
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<tr>
<td>Filoviruses</td>
<td>MVA-BN® Filo</td>
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<td></td>
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<tr>
<td>Foot-and-mouth disease</td>
<td>MVA-BN® FMDV</td>
<td></td>
<td></td>
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<tr>
<td>RSV</td>
<td>MVA-BN® RSV</td>
<td></td>
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</table>

### Cancer Immunotherapy

<table>
<thead>
<tr>
<th>Disease</th>
<th>Preclinical</th>
<th>Phase 1</th>
<th>Phase 1/2</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate cancer</td>
<td>PROSTVAC®</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal cancer</td>
<td>CV-301 Colon Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td>CV-301 Breast Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>MVA-BN® PRO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast cancer</td>
<td>MVA-BN® HER2</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

* Approved in the EU under the trade name IMVANEX® and in Canada under the trade name IMVAMUNE®. Sold to government stockpiles under national emergency rules. Phase 3 registration studies ongoing in the U.S.
OUR INFECTIOUS DISEASES BUSINESS
THE MVA-BN® VACCINE PLATFORM

MVA-BN (IMVAMUNE)

- Approvals in EU and Canada
- Balanced Immune Response
- Strong IP Protection

MVA-BN Antigen(s)

Recombinant MVA-BN

Vaccine Platform

- Approvals in EU and Canada
- Balanced Immune Response
- Strong IP Protection

Research & Development

- Construct Optimization
- Immune Enhancement
- Preclinical Analysis

Manufacturing

- Research Drug Product
- Clinical Batch Production
- Commercial Manufacturing
SMALLPOX: STILL A GLOBAL THREAT

PREVALENCE AND BIOTERRORISM

- Worldwide eradication in 1980, but security experts remain concerned
- Sources of smallpox could be WHO repositories, lab archives, virus creation
- U.S. Dept of Homeland Security: smallpox is a high-priority threat
- Security experts: biological terrorism is more likely than nuclear terrorism

IMPACT

- HIGHLY VIRULENT: Transmitted through the air, face-to-face contact, and contact with contaminated surfaces/objects
- DEADLY: historically, smallpox has a 30% mortality rate of those who contracted it
- VACCINATION: is the only protection
- Transmission/death rates would be higher today due to decreasing herd immunity and increasing immunodeficiency within the population
IMVAMUNE® ADVANTAGES

TRADITIONAL SMALLPOX VACCINES

Traditional vaccines are based on a replicating vaccinia virus
- Dryvax®, ACAM2000, LC16m8, Elstree-BN

All have been shown to produce some/all of following side effects
- Eczema Vaccinatum, encephalitis, generalized vaccinia, inadvertent infection - skin and eyes/self and contacts, myo-pericarditis

Significant portion of the population cannot receive replicating vaccines
- People with immune deficiencies (e.g., HIV, AIDS, cancer patients), or skin disorders (e.g. eczema, atopic dermatitis)

IMVAMUNE®/IMVANEX®

Based on a non-replicating virus

Approved in EU and Canada

More than 7,300 individuals have been vaccinated
- Well tolerated - even in immune-compromised patients
- None of the severe side-effects related to the replicating vaccines
INDICATED FOR:

• EU: Active immunization against smallpox for entire adult population
• CANADA: Active immunization against smallpox for adults with immune deficiencies or skin disorders

PROCUREMENT:

• Available for governments to purchase
• To protect
  • People who are not considered candidates to receive the replicating vaccines (i.e. people with skin disorders and immune deficiencies)
  • Military, first responders and healthcare/lab workers

Trade name: IMVANEX®
Approved August 2013

Trade name: IMVAMUNE®
Approved November 2013
MULTIPLE US GOVERNMENT CONTRACTS
~USD 300 MILLION STILL TO BE RECOGNIZED/RECEIVED*

<table>
<thead>
<tr>
<th>USD million</th>
<th>P&amp;L</th>
<th>Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract value</td>
<td>Revenue recognized</td>
</tr>
<tr>
<td>IMVAMUNE: RFP-3</td>
<td>777</td>
<td>563</td>
</tr>
<tr>
<td>IMVAMUNE: RFP-2</td>
<td>116</td>
<td>115</td>
</tr>
<tr>
<td>IMVAMUNE: RFP-1</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>IMVAMUNE: RFP freeze-dried (R&amp;D)</td>
<td>95</td>
<td>31</td>
</tr>
<tr>
<td>Marburg (R&amp;D)</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Foot-and-mouth (R&amp;D)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,021</td>
<td>724</td>
</tr>
</tbody>
</table>

* As of 30 September 2013
IMVAMUNE® - ANTICIPATED DEVELOPMENTS

- **2014**
  - Deliveries, new contract
  - Phase 2 - freeze-dried version to support emergency use/stockpiling (n=680)
  - Phase 3 lot consistency trial - enrollment completed (n=4,000)
  - Phase 3 non-inferiority trial (n=440)

- **2015**
  - Potential additional orders

- **2016 and on**
  - Freeze-dried contract
  - BLA
  - Approved in these markets
  - Market opportunity
  - Market opportunity
Validated platform technology & infrastructure offers:

- **Accelerated candidate selection**
  - Design of optimal transgene sequences
  - Understanding of insertion sites and proprietary promoters to ensure strong antibody and T cell response

- **Streamlined clinical development with MVA-BN**
  - Already extensively tested in diverse populations and age groups (immunocompromised, children 6 months+, elderly up to age 80)
  - cGMP manufacturing of clinical trial supplies of recombinant MVA-BN
  - Potential to reference established safety record with regulatory authorities

**Internal development programs:**

- **MVA-BN RSV**
  - No approved vaccine; high unmet medical need
  - Recombinant MVA-BN vaccine candidate encoding two surface proteins of RSV
  - Shown to induce a protective immune response in preclinical model, while not inducing inflammation in the lungs

- **Recombinant MVA-BN filovirus & Foot-and-Mouth Disease vaccines**
OUR CANCER IMMUNOTHERAPY BUSINESS
POXVIRUS TECHNOLOGY PLATFORM

**PROSTVAC**
- Prostate cancer
  - PSA

**CV-301**
- Colorectal, Breast, Lung, Ovarian, Gastric, Bladder, Liver and Renal cancer
  - CEA
  - MUC-1

**TRICOM**
- TRIad of CO-stimulatory Molecules
  - LFA-3
  - ICAM-1
  - B7.1

**Vectors**
- Vaccinia + Fowlpox (VF)
  - (Prime)
  - (Boost)

GM-CSF can be used as adjuvant in both PROSTVAC® and CV-301
PROSTVAC®
PSA TARGETED IMMUNOTHERAPY CANDIDATE TO TREAT PROSTATE CANCER
PROSTATE CANCER
A LARGE UNMET MEDICAL NEED

GLOBALLY¹)
- More than 900,000 cases/year
- More than 250,000 deaths/year

IN THE USA²)
PREVALENCE
- ~2,600,000 prostate cancer patients
- ~30,000 deaths/year
INCIDENCE/YEAR
- ~240,000 prostate cancer patients are newly diagnosed
- ~70,000 prostate cancer patients have biochemical recurrence
- ~30,000 patients become metastatic castration-resistant (mCRPC)

¹) Global Cancer Facts & Figures, 2nd Edition, American Cancer Society
²) SEER Database (www.seer.cancer.gov)
KEY FACTS OF PROSTVAC

- Targets a known tumor-associated antigen (PSA) and encodes co-stimulatory molecules
- Prime/boost regimen provides a targeted and robust T cell immune response over time
- To be manufactured at BN’s state-of-the-art commercial manufacturing site
- Ready-to-use; non-patient specific manufacturing offers attractive margins
- Convenient subcutaneous administration
- Easily integrated in community-based urology and oncology practices
- Applicable to a broad patient population
**PROSTVAC MODE OF ACTION**

*Five-pronged immune activation*
- Immuno-enhanced PSA sequence
- Co-expressed TRICOM co-stimulants
- Virus-induced adjuvant reaction
- Vaccinia/fowlpox prime/boost
- Concurrent GM-CSF
PROSTVAC has a robust clinical data package providing rationale for:
- Phase 3 trial as monotherapy in late-stage prostate cancer
- Combination and sequencing studies
  - PROSTVAC plus anti-androgens
  - PROSTVAC plus immune checkpoint inhibitors
- Early prostate cancer indications

**12 ongoing or completed PROSTVAC clinical trials**

<table>
<thead>
<tr>
<th></th>
<th>Completed</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Phase 2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Phase 3</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td><strong>Total patients</strong></td>
<td><strong>300+</strong></td>
<td><strong>1,300+</strong></td>
</tr>
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</table>
CLINICAL DEVELOPMENT PROGRAMS SUPPORT POSITIONING PROSTVAC FOR EARLIER TREATMENT OF PROSTATE CANCER

PROSTVAC clinical trials span from early to late stage disease, including combination therapy.
PROSTVAC PHASE 2 RESULTS
MOST PRONOUNCED SURVIVAL TO DATE IN PROSTATE CANCER

Significantly extended overall survival

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Deaths</th>
<th>Median OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>40</td>
<td>37</td>
<td>16.6</td>
</tr>
<tr>
<td>PROSTVAC</td>
<td>82</td>
<td>65</td>
<td>25.1</td>
</tr>
<tr>
<td>Δ</td>
<td></td>
<td></td>
<td>8.5 months</td>
</tr>
</tbody>
</table>

Hazard ratio
0.56 (95% CI 0.37–0.85)
p=0.0061

Pivotal data of approved agents:
Provenge®: ΔOS = 4.1 mo (AS/MS mCRPC)
Zytiga®: ΔOS = 5.2 mo (pre-chemo mCRPC)
Xtandi®: ΔOS = 4.8 mo (post-chemo mCRPC)

Reference
Package insert Sipuleucel-T, enzalutamide and abiraterone

Overall Survival Analysis of a Phase II Randomized Controlled Trial of a Poxviral-Based PSA-Targeted Immunotherapy in Metastatic Castration-Resistant Prostate Cancer
Kantoff et al., Journal of Clinical Oncology, January 2010
PROSPECT
A RANDOMIZED, DOUBLE-BLIND, GLOBAL PHASE 3 EFFICACY TRIAL OF PROSTVAC IN METASTATIC CASTRATION-RESISTANT PROSTATE CANCER

• 13 countries active, +170 sites
  • US, Canada, Spain, UK, Iceland, Israel, Denmark, Estonia, Belgium, Russia, France, Poland & Australia as of January 2014

• Full enrollment anticipated in H1 2014

• Interim analysis plan
  • Pre-specified interim data analyses will evaluate whether the trial should continue as planned or potentially be stopped early for efficacy or futility
  • Potential for early data read-out

1,200 patients

3 study arms

PROSTVAC + GM-CSF
PROSTVAC
Placebo

Primary endpoint is overall survival

Either one of the treatment arms must be superior to placebo
Each comparison requires 534 deaths for the final analysis

Phase 2 results:
Demonstrated hazard ratio 0.56 = 44% reduction in risk of death

SPA terms for Phase 3:
Required hazard ratio 0.82 or less = 18% reduction in risk of death
CV-301

CEA/MUC-1 TARGETED IMMUNOTHERAPY CANDIDATE FOR COLORECTAL CANCER
COLORECTAL CANCER
A LARGE UNMET MEDICAL NEED

GLOBALLY\(^1\)

- More than 1,200,000 new cases/year
- More than 600,000 deaths/year

IN THE USA

- \(~1,100,000\) CRC\(^2\) patients
- \(~142,000\) CRC\(^2\) new cases/year
- Up to 20,000 patients (33%\(^3,4\)) eligible for liver metastases resection with curative intent

1) Global Cancer Facts & Figures, 2nd Edition, American Cancer Society
2) SEER Database (www.seer.cancer.gov)
4) MedStar Health Electronic Medical Records Database: Primary Data
CV-301 TARGETED FOR CLINICAL DEVELOPMENT IN COLORECTAL CANCER

- Stimulates immune system to destroy tumors by targeting two tumor-associated antigens (TAA):
  - CEA: Carcinoembryonic antigen
  - MUC-1: Mucin-1
- Wide-ranging clinical applicability e.g. colorectal and breast cancer
- Emerging favorable risk-benefit profile supported by broad Phase 1 & 2 clinical dataset
- Prime/boost sequencing enhances immune response
- Currently designing randomized, controlled trial in CRC patients following surgical resection for liver metastases

### CEA\(^1\) AND MUC-1\(^2\) ARE OVER-EXPRESSED IN COLON CANCER

<table>
<thead>
<tr>
<th></th>
<th>CEA+</th>
<th>MUC-1+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal Cancer</td>
<td>&gt;90%</td>
<td>&gt;90%</td>
</tr>
</tbody>
</table>

1) Chevinsky et al. Semin Surg Oncol. 1991;7:162-166  
CV-301 IN COLORECTAL CANCER

- NCI-sponsored Phase 2 study at Duke University
- 74 patients with surgical resection and chemotherapy for metastatic colon cancer followed by CV-301 (with GM-CSF or dendritic cells)
- 161 concurrent, matched Duke control patients

Longer overall survival (p < 0.0001)
PFS not different

Morse MA et al., Ann Surg 2013
BN’S IMMUNOTHERAPIES COMBINED WITH CHECKPOINT INHIBITORS HAVE THE POTENTIAL OF THERAPEUTIC SYNERGY

**PROSTVAC/Ipilimumab Combination Study**
- Phase 1 dose escalation trial; 30 patients with mCRPC

<table>
<thead>
<tr>
<th></th>
<th>Median Halabi Predicted Survival (^2) (months)</th>
<th>Median Overall Survival (months)</th>
<th>Δ OS (months)</th>
<th>Alive at 24 months</th>
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</thead>
<tbody>
<tr>
<td>PROSTVAC + Ipilimumab(^1)</td>
<td>18.5</td>
<td>34.4</td>
<td>+15.9</td>
<td>73%</td>
</tr>
</tbody>
</table>

**Preclinical models: MVA-BN-HER2/Anti-CTLA-4 Ab Combination\(^3\)**

![Graph showing percent survival over time]

Day 1: Tumor challenge
Day 3, 17: anti-CTLA-4 Ab
Day 4, 18: MVA-BN\(^\circledR\)-HER2

\(^1\) Madan et al., Lancet Oncol 2012; \(^2\) Halabi et al., JCO 2003
\(^3\) Foy, et al. SITC 2013
SUMMARY & FINANCIALS
# Financial Position and Guidance for 2013

## Revenue Streams
- Vaccine deliveries to the U.S. government since 2003
- Government-funded R&D contracts

## Revenues and Results, 5 Years

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
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<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>Revenue</td>
<td>-500</td>
<td>0</td>
<td>500</td>
<td>1,000</td>
<td>1,500</td>
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<tr>
<td>Income before tax</td>
<td>0</td>
<td>0</td>
<td>500</td>
<td>1,000</td>
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<tr>
<td>Cash preparedness, 30-Sep</td>
<td>0</td>
<td>0</td>
<td>500</td>
<td>1,000</td>
<td>1,500</td>
</tr>
</tbody>
</table>

## Q1-Q3 2013 Results
- Revenue: DKK 875m
- Income before tax: DKK -18m
- Cash preparedness, 30-Sep: DKK 546m

## Financial Guidance for 2013
- Revenue: DKK 1,100m
- Income before tax: DKK 0m
- Cash preparedness at YE: DKK 600m
ANTICIPATED MILESTONES

PROSTVAC
• Complete enrollment in the PROSPECT trial (H1, 2014)
• Explore use of PROSTVAC in combination and sequencing
• Prepare Kvistgaard facility for commercial manufacturing of PROSTVAC
• PROSPECT interim analyses

CV-301
• Receipt of FDA feedback and provide development plan in colorectal cancer (H2 2014)
• Initiate randomized controlled trial

IMVAMUNE/INFECTIONOUS DISEASE
• Continued deliveries of IMVAMUNE to the U.S. Strategic National Stockpile
• Potential receipt of orders from Canada or EU countries
• Initiate final Phase 3 trial of IMVAMUNE
ANDERS HEDEGAARD
PRESIDENT & CEO
More than 20 years industry experience. Prior executive positions with ALK-Abelló A/S, FOSS A/S and Novo Nordisk A/S.

OLE LARSEN
EVP AND CFO
Over 20 years of experience. Previously CFO of Nordisk Film and Berlingske Tidende.

JAMES BREITMEYER, M.D., PH.D.
EVP AND DIVISION PRESIDENT, CANCER IMMUNOTHERAPY

PAUL CHAPLIN, PH.D.
EVP AND DIVISION PRESIDENT, INFECTIOUS DISEASES
Managed the development of IMVAMUNE since the program’s inception and responsible for managing development and procurement contracts with the US government.
BAVARIAN NORDIC  (CSE/OMX:BAVA, OTC:BVNRY)

- Approved product; validated platform
- Two Phase 3 programs:
  - Prostate cancer and smallpox
- Pipeline drawing from distinct technologies
- Commercial manufacturing capability
- Long-term R&D and delivery contracts with the US government
- Revenue-generating

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