

\*\*\*\*Updated Jan 2011\*\*\*\*

## MarketVIEW: *Pseudomonas aeruginosa* vaccines (CAT: VAMV010)

<b>Proposal No/#PO</b>	:	<b>[Enter client specific #PO]</b>
<b>Product Name</b>	:	MarketVIEW: <i>Pseudomonas aeruginosa</i> vaccines – Global market forecast
<b>Project Initiation Date</b>	:	n/a
<b>Billable days</b>	:	n/a
<b>Initiator(s)</b>	:	[Enter client name, function and address]
<b>Therapeutic Area</b>	:	<i>Nosocomial vaccines</i>
<b>Product (if applicable)</b>	:	<b>CAT No:</b> VAMV010, updated January 2011

## Background

Gram negative *Pseudomonas aeruginosa* (PA) is primarily a nosocomial pathogen accounting for around 10% of all hospital acquired infections second only to *Staphylococcus aureus*. PA infections are invasive and toxigenic and affect a wide variety of patient groups but mainly those with lung dysfunction such as pneumonia (ICU, ventilator assisted patients<sup>1</sup>), COPD and Cystic fibrosis. Other important risk groups are severe burns patients.

Although PA infections are treatable, many forms of PA are multidrug resistant (MDR) and associated with high mortality. Despite previous failures of developmental prophylactic vaccines to prevent PA infections (Berna's Aerugen) vaccine companies are now investigating newer strategies with the most advanced vaccine now in Phase II testing (IC-43, Intercell AG).

This **MarketVIEW** product is an Executive presentation and MS forecast model giving a comprehensive vaccine value (\$USD/volume (000s) forecast of *Pseudomonas aeruginosa* vaccine within target nosocomial and lung disease populations until 2030 (global). The model includes **LO/BASE/HI** forecast scenarios so the user can visualize the commercial impact of differing targetting/competitive and pricing scenarios. This product is an essential component of any commercial opportunistic assessment focused on nosocomial vaccines.

---

<sup>1</sup> Late-onset VAP – ventilator associated pneumonia

## Methodology

Using currently available information regarding the profile and predicted deployment of *Pseudomonas aeruginosa* prophylactic vaccines **VacZine Analytics** has modelled three potential global vaccine demand scenarios (mio doses) and revenue estimates (\$ 000s) based upon detailed analysis of “at risk” target populations across major Western markets. The provided model also includes adjustable inputs of vaccine penetration, number of doses and pricing.

**VacZine Analytics** has closely monitored all significant source material pertaining to *Pseudomonas aeruginosa* epidemiology/vaccines. Source materials used are literature articles, government websites, medical bodies and associations, conference proceedings etc. Previously published research by **VacZine Analytics** in the nosocomial field has also been utilised.

### PRODUCT CONTENTS:

**Updated Jan 2011 (CAT No: VAMV010), PAGES: 30 MS PowerPoint slides, fully referenced/sourced. Available in .pdf form**

\*\*\*\*This product is composed of a model and summary presentation

#### Contents – Summary presentation (MS PowerPoint based)

- Author's Note
- Executive Summary
- Pseudomonas vaccine – key model outputs
- Pseudomonas vaccine total global predicted demand (doses, all scenarios)
- Pseudomonas vaccine total global available market (\$000s all scenarios)
- Total global available market per country, base case (\$ 000s)
- ICU-MV patients, potential market (\$000s) to 2030
- Total available volume (doses) per vaccine segment, US – 2020
- Total available value (\$ 000s) per vaccine segment, US – 2020
- Pseudomonas vaccine – key model assumptions
- The role of *Pseudomonas aeruginosa* vaccine
- Possible target populations for a Pseudomonas vaccine
- How could a Pseudomonas vaccine be used in VAP?
- Markets included in model
- Population segments included in model: scenario definition
- Population segments – low case
- Population segments – base case
- Population segments – hi case
- Quantifying patient segments: at risk ICU
- Quantifying patient segments: burns and cystic fibrosis
- Quantifying patient segments: lung diseases
- Quantifying patient segments: selected transplants
- Major commercial model assumptions
- Commercial model assumptions: US/Canada + Major EU
- Commercial model assumptions: Major EU + other EU
- Commercial model assumptions: Australia/Japan
- Pricing: high level pharmacoeconomic analysis – ICU VAP
- Pseudomonas vaccine – competitive environment

US economic burden of VAP and potential cost savings  
Pseudomonas vaccines: competitive environment  
Intercell Pseudomonas vaccine (IC-43)  
IC-43: update October 2010  
Intercell Pseudomonas vaccine (IC-43): estimated filing dates per indication  
Pseudomonas monoclonal antibodies: clinical candidates  
Background to ventilator associated pneumonia (VAP)  
Risk factors for MDR pathogens causing HAP/VAP  
Current management of VAP  
Bibliography  
Disclaimer  
About **VacZine Analytics**

### **Contents – Vaccine demand model (MS Excel-based)**

Title sheet  
TOTAL CHARTS – forecast to 2030  
CHARTS ICU-MV  
CHARTS VALUE – HIGH  
CHARTS VALUE – BASE  
CHARTS VALUE – LO  
CHARTS VOLUME – HIGH  
CHARTS VOLUME – BASE  
CHARTS VOLUME – LO  
VALUE SUMMARY (TOTAL MARKET)  
VOLUME SUMMARY (TOTAL MARKET)  
VAL VOL SUMMARY (ICU-MV) only  
US (all scenarios LO/BASE/HIGH)  
Canada  
UK  
Germany  
France  
Spain  
Italy  
EU – other  
Australia  
Japan  
Country target vaccine populations – forecast to 2030  
Source material  
Mechanical ventilations  
CF Epidemiology  
HESOnline (UK)  
Transplants  
Pricing analysis  
Back page  
About VacZine Analytics  
Disclaimer

**WORKSHEETS: 65**

## PRODUCT COST:

**VacZine Analytics** will grant a [enter region] license to [enter client name], for the price of:

- o USD \$7995.00/ GBP £5395.00 (Region license)\*

\*A region is North America, Europe or ROW

For orders in the UK, VAT at 20% will be added to final invoice total

## HOW TO ORDER:

To order please contact your region account manager or order direct at [orders@vaczine-analytics.com](mailto:orders@vaczine-analytics.com)

This report can also be purchased on-line. Please review the **TERMS and CONDITIONS** of purchase.



**VacZine Analytics (R)** is a trading division of Assay Advantage Ltd, UK Company Number: 5807728

**VacZine Analytics (R)** and the “spiral logo” are UK Registered Trademarks, 2009

## BIBLIOGRAPHY:

1. HCUP Nationwide Inpatient Sample (NIS). Available at: <http://hcupnet.ahrq.gov/>. Accessed: April 2010
2. HESOnline (England). Inpatient data. Available at: <http://www.hesonline.nhs.uk/>. Accessed: April 2010
3. Wunsch H et al. Variation in critical care services across North America and Western Europe. *Crit Care Med*. 2008 Oct;36(10):2787-93, e1-9.
4. American Burn Association National Burn Repository, 2005 report. Available at: <http://www.ameriburn.org/>. Accessed April 2010.
5. Pasteur MC et al. An investigation into causative factors in patients with bronchiectasis. *Am J Respir Crit Care Med*. 2000 Oct;162(4 Pt 1):1277-84.
6. VacZine Analytics – internal analysis, 2010
7. Murphy TF et al. *Pseudomonas aeruginosa* in chronic obstructive pulmonary disease. *Am J Respir Crit Care Med*. 2008 Apr 15;177(8):853-60.
8. Botha P et al. *Pseudomonas aeruginosa* colonization of the allograft after lung transplantation and the risk of bronchiolitis obliterans syndrome. *Transplantation*. 2008 Mar 15;85(5):771-4.
9. Hashimoto M et al. *Pseudomonas aeruginosa* infection after living-donor liver transplantation in adults. *Transpl Infect Dis*. 2009 Feb;11(1):11-9.
10. Zeglen S et al. Frequency of *Pseudomonas aeruginosa* colonizations/infections in lung transplant recipients. *Transplant Proc*. 2009 Oct;41(8):3222-4.
11. Bert F et al. Microbial epidemiology and outcome of bloodstream infections in liver transplant recipients: an analysis of 259 episodes. *Liver Transpl*. 2010 Mar;16(3):393-401.
12. Linares L et al. Epidemiology and outcomes of multiple antibiotic-resistant bacterial infection in renal transplantation. *Transplant Proc*. 2007 Sep;39(7):2222-4.
13. Ramos A et al. Incisional surgical site infection in kidney transplantation. *Urology*. 2008 Jul;72(1):119-23.
14. Safdar N et al. Clinical and economic consequences of ventilator-associated pneumonia: A systematic review. *Crit Care Med*. 2005;33, 2184-2193
15. Bou R et al. Hospital economic impact of an outbreak of *Pseudomonas aeruginosa* infections. *J Hosp Infect*. 2009. 71, 138-142

16. Warren DK et al. Outcome and attributable cost of ventilator associated pneumonia among ICU patients in a suburban medical center. *Crit Care Med*. 2003;31:1312-1317
17. Vallés J et al. Patterns of colonization by *Pseudomonas aeruginosa* in intubated patients: a 3-year prospective study of 1,607 isolates using pulsed-field gel electrophoresis with implications for prevention of ventilator-associated pneumonia. *Intensive Care Med*. 2004 Sep;30(9):1768-75.
18. Restrepo MI et al. Economic burden of ventilator-associated pneumonia based on total resource utilization. *Infect Control Hosp Epidemiol*. 2010 May;31(5):509-15
19. Intercell AG Corporate Press Release. October 25th 2010. Available at: <http://www.intercell.com/main/forbeginners/news/news-full/article/intercell-reports-positive-results-from-its-phase-ii-pseudomonas-aeruginosa-investigational-vaccine/>. Accessed December 2010
20. Intercell AG Corporate Press Release. October 25th 2010. Available at: [http://www.intercell.com/fileadmin/user\\_upload/investors/Presentations/Analyst\\_Call\\_2010\\_12\\_15\\_FINAL.pdf](http://www.intercell.com/fileadmin/user_upload/investors/Presentations/Analyst_Call_2010_12_15_FINAL.pdf). Accessed December 2010
21. Craven DE et al Risk factors for pneumonia and fatality in patients receiving continuous mechanical ventilation. *AmRev Respir Dis* 1986; 133:792–796.
22. Tablan OC et al. Healthcare Infection Control Practices Advisory Committee, Centers for Disease Control and Prevention. Guidelines for preventing health-care–associated pneumonia, 2003: recommendations of the CDC and the Healthcare Infection Control Practices Advisory Committee. *MMWR Recomm Rep* 2004;53(RR-3):1–36.
23. Chastre J, Fagon JY. Ventilator-associated pneumonia. *Am J Respir Crit Care Med* 2002;165:867–903.
24. Rello J, Ollendorf DA, Oster G, Montserrat V, Bellm L, RedmanR, Kollef MH. Epidemiology and outcomes of ventilator-associated pneumonia in a large US database. *Chest* 2002;122:2121.
25. Guidelines for the management of Adults with hospital-acquired, Ventilator associated, Healthcare-associated Pneumonia. American Thoracic Society Documents. *Am Respir Crit Care Med* Vol 171. pp 388-416

## TERMS and CONDITIONS:

VacZine Analytics – a trading division of Assay Advantage Ltd UK Company Number: 5807728 (Herein referred to as “The Company”). (Herein [enter client name] to as “The Client”).

1. This finished research product is provided is provided as a Service. Any additional Service required by the client will be subject to a new proposal being prepared.
2. The Service will commence after written (e-mail) or Fax confirmation stating the Client's acceptance of the Service according the description proposed by the Company.
3. **Cancellation policy.** The Company's cancellation policies are in accordance with the EU Consumer Protection (Distance Selling) Regulations 2000 (DSRs). Prior to acceptance of an order the Company will make available written information regarding Clients cancellation rights. This is posted on the Company website and is available for public review.
4. **Cancellation rights:** For finished documents - a Clients cancellation rights will last for **seven working days** counting from the day that the order was concluded. If the Services i.e. provision of the documents has taken place with the Clients agreement before this period the Client's cancellation rights have ended.
5. Invoicing will **100%** after submission of deliverables to the Client in a form reasonably acceptable to the Client.
6. If not purchased on line invoices are payable within **thirty days** of the invoice date.
7. All proposals are quoted in **\$USD dollars or £GBP** and invoices are to be settled in the same currency.
8. The Company agrees not to disclose to any third party confidential information acquired in the course of providing the services listed without the prior written consent of the Client. Exception occurs when the information is already in the public domain or when disclosure is necessary to help the Company's employees and agents with the performance of the Company's obligations to achieve satisfactory completion of the project and approved in writing by the Client.
9. Force Majeure: The Company will not be liable for any delay or failure to perform any obligation under this Agreement insofar as the performance of such obligation is prevented by an event beyond our reasonable control, included by not limited to, earthquake, fire, flood or any other natural disaster, labour dispute, riot, revolution, terrorism, acts of restraint of government or regulatory authorities, failure of computer equipment and failure or delay of sources from which data is obtained.
10. Please also refer to Master **TERMS and CONDITIONS** available upon request.

### VacZine Analytics

Warren House  
Bells Hill  
Bishops Stortford  
Herts  
CM23 2NN  
United Kingdom  
Tel: +44 (0) 1279 654514 / +44 (0) 7952470582 / Fax: +44 (0) 1279 655926  
E-mail: [info@vacZine-analytics.com](mailto:info@vacZine-analytics.com)

## About VacZine Analytics:

**VacZine Analytics** is an established strategic research agency based in the United Kingdom. Its aim is to provide disease and commercial analysis for the vaccine industry and help build the case for developing new vaccines and biologics.

For more information please visit our website [www.vacZine-analytics.com](http://www.vacZine-analytics.com)

**VacZine Analytics (R)** is a trading division of Assay Advantage Ltd, UK Company Number: 5807728

**VacZine Analytics (R)** and “the spiral logo” are UK Registered Trademarks, 2009