Aeterna Zentaris

Investor Presentation

May 18, 2011

Æterna Zentaris

Committed to cure

Forward-Looking Statements

This presentation contains forward-looking statements made pursuant to the safe harbor provisions of the U.S. Securities Litigation Reform Act of 1995. Forward-looking statements involve known and unknown risks and uncertainties, which could cause Æterna Zentaris' actual results to differ materially from those in the forward-looking statements. Such risks and uncertainties include, among others, the availability of funds and resources to pursue R&D projects, the successful and timely completion of clinical studies, the ability of the Company to take advantage of business opportunities in the pharmaceutical industry, uncertainties related to the regulatory process and general changes in economic conditions. Investors should consult the Company's quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties relating to the forward-looking statements. Investors are cautioned not to rely on these forward-looking statements. The Company does not undertake to update these forward-looking statements and disclaims any obligation to update any such factors or to publicly announce the result of any revisions to any of the forward-looking statements contained herein to reflect future results, events or developments, except if we are required to do so by a governmental authority or under applicable law.

Company Overview

- **Late-stage drug development company primarily focused on potential treatments for various cancers**
  - Perifosine: 2 pivotal Phase 3 studies ongoing
  - AEZS-108: completed positive Phase 2 for gynecological cancers
  - AEZS-130: currently in Phase 3 under a Special Protocol Assessment as oral diagnostic for AGHD
- **AEZS-130: NDA filing planned in 2011**
- **Perifosine: NDA and MAA filings planned in 2012**
- **Solid cash position sufficient to take us to these filings**

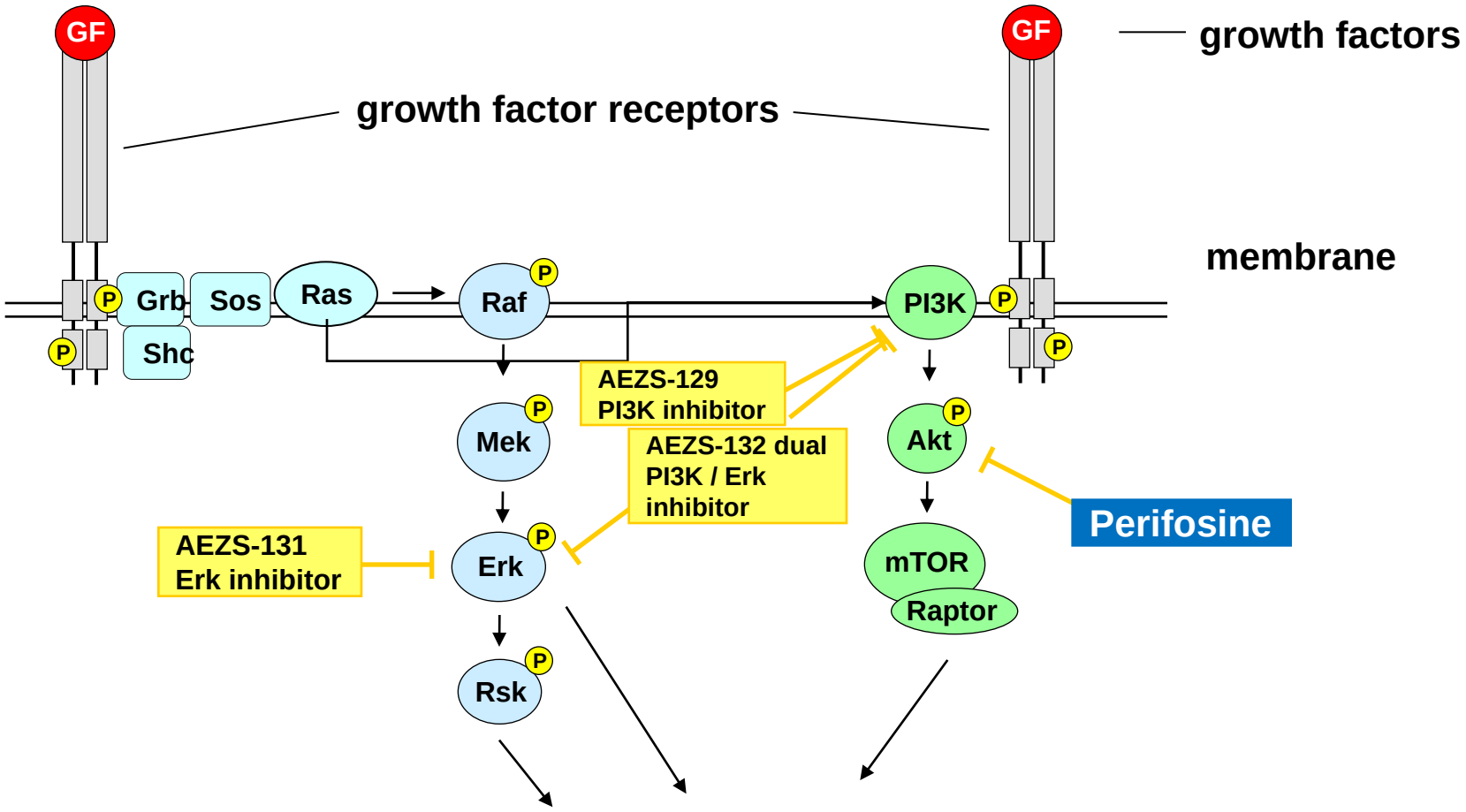
Management Team

Juergen Ernst Chairman	30+ years experience: Solvay
Juergen Engel, Ph.D. President and CEO	30+ years experience: ASTA Medica
Paul Blake, M.D. Senior VP and CMO	25+ years experience: Cephalon, SmithKline Beecham (now GSK), ICI Pharmaceuticals (now Astra Zeneca)
Nicholas J. Pelliccione, Ph.D. Senior VP, Regulatory Affairs and QA	20+ years experience: Chugai Pharma USA , Schering-Plough
Matthias Seeber, M.B.A. Senior VP, Administration and Legal Affairs	15+ years experience: Altana AG, Deka Investment Management, Dresdner Bank AG
Dennis Turpin, CA Senior VP and CFO	20+ years experience: Coopers & Lybrand (now PWC)

Pipeline

Compound	Indication	Preclinical	Phase 1	Phase 2	Phase 3	Commercial
Perifosine	Advanced Colorectal Cancer	Partners: Keryx (North America) & Handok (Korea) & Yakult (Japan)				
	Multiple Myeloma	Partners: Keryx (North America) & Handok (Korea) & Yakult (Japan)				
	Kidney Cancer and Others	Partners: Keryx (North America) & Handok (Korea) & Yakult (Japan)				
AEZS-108	Endometrial Cancer					
	Ovarian Cancer					
	Refractory Prostate Cancer					
	Bladder Cancer					
	Other Cancers					
AEZS-112	Solid Tumor					
AEZS-120 Tumor Vaccine	Prostate Cancer					
AEZS-129/131/132 PI3K/Erk Inhibitor	Oncology					
Cetrotide®	*In Vitro* Fertilization	Partners: Merck Serono, Nippon Kayaku / Shionogi (Japan)				
AEZS-130	Diagnostic – Adult Growth Hormone Deficiency					
AEZS-130 Ghrelin Agonist	Cancer Cachexia and Other Therapeutic Use					
AEZS-123 Ghrelin Antagonist	Endocrinology					

AEZS Inhibitor Programs



Perifosine Overview

More than 2,000 patients in Phase 1 and 2

- Single agent and in combination (oral dosage 50-100 mg per day)
- Well tolerated at current doses

Indications

- Refractory Advanced Colorectal Cancer (CRC): Phase 3
  - SPA and Fast-Track review granted by FDA
  - Positive Scientific Advice granted by EMA
- Multiple Myeloma (MM): Phase 3
  - SPA, orphan-drug designation and Fast-Track review granted by FDA
  - Orphan Drug Designation and Positive Scientific Advice granted by EMA
- Phase 1/2 studies ongoing in other tumor types

Perifosine Overview

Potential market from Decision Resources

- Refractory Advanced Colorectal Cancer (CRC)
  - One of the most common cancer worldwide
  - 480,000 newly diagnosed cases in 2010 for the seven major-markets
  - In U.S., 160,000 diagnosed cases with 28,000 in stage IV
- Multiple Myeloma (MM)
  - The second most prevalent blood cancer
  - 60,000 death per year
  - 130,000 diagnosed prevalent cases expected in 2010 for the seven major-markets
  - In U.S., 55,000 diagnosed prevalent cases expected in 2010
  - Treatable pool for perifosine third line or more nearly 25,000 patients in the U.S.
  - The relapsed/refractory patient populations in 2010 will be in total 32,000 cases, with 14,000 cases for the U.S.

Perifosine in Colorectal Cancer

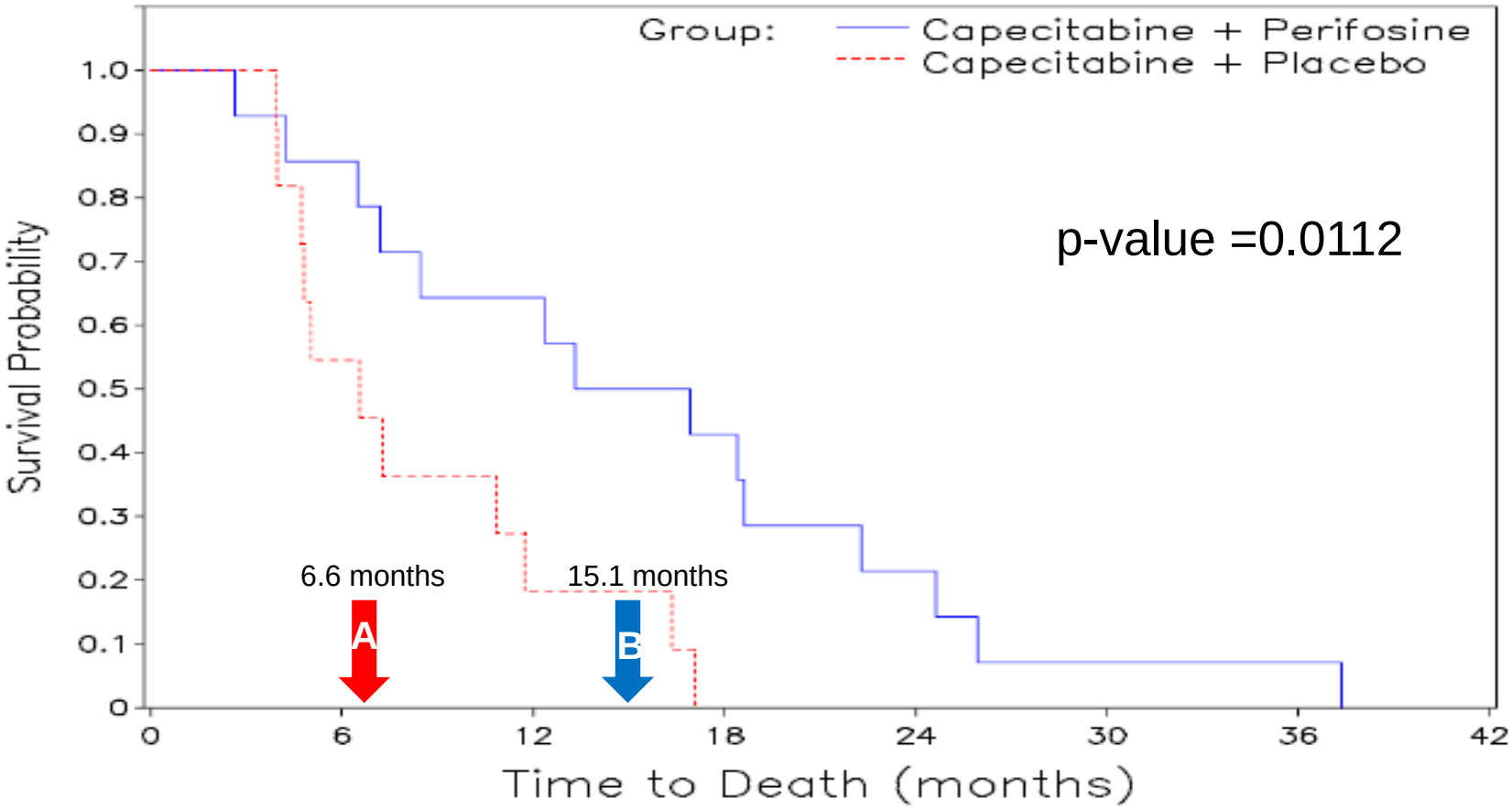
Phase 2 Results in Advanced Metastatic CRC – Responses

Group	Number (n)	CR n (%)	PR n (%)	CBR n (%)	Median TTP	OS
Xeloda® + perifosine	**20**	**1 (5%)**	**3 (15%)**	**15 (75%)**	**28 weeks**	**17.7 months**
Xeloda® + placebo	**15**	**0**	**1 (7%)**	**6 (40%)**	**11 weeks**	**10.9 months**
CR – Complete response; PR – Partial response; CBR – Clinical benefit response; TTP– Time to progression					**p = 0.0012**	**p = 0.0161**

- Treatment regimen: Xeloda® 825 mg/m^2 BID d1-14; perifosine 50 mg daily
- Duration of responses:
  - Xeloda® + perifosine: CR – 36 months; PR – 21, 19, 11 months
  - Xeloda® + placebo: PR – 7 months

Ref.: D. Richards et al. ASCO 2010

Phase 2 Results in Advanced Metastatic CRC – Subgroup of 5-FU Refractory Patients: Median Overall Survival

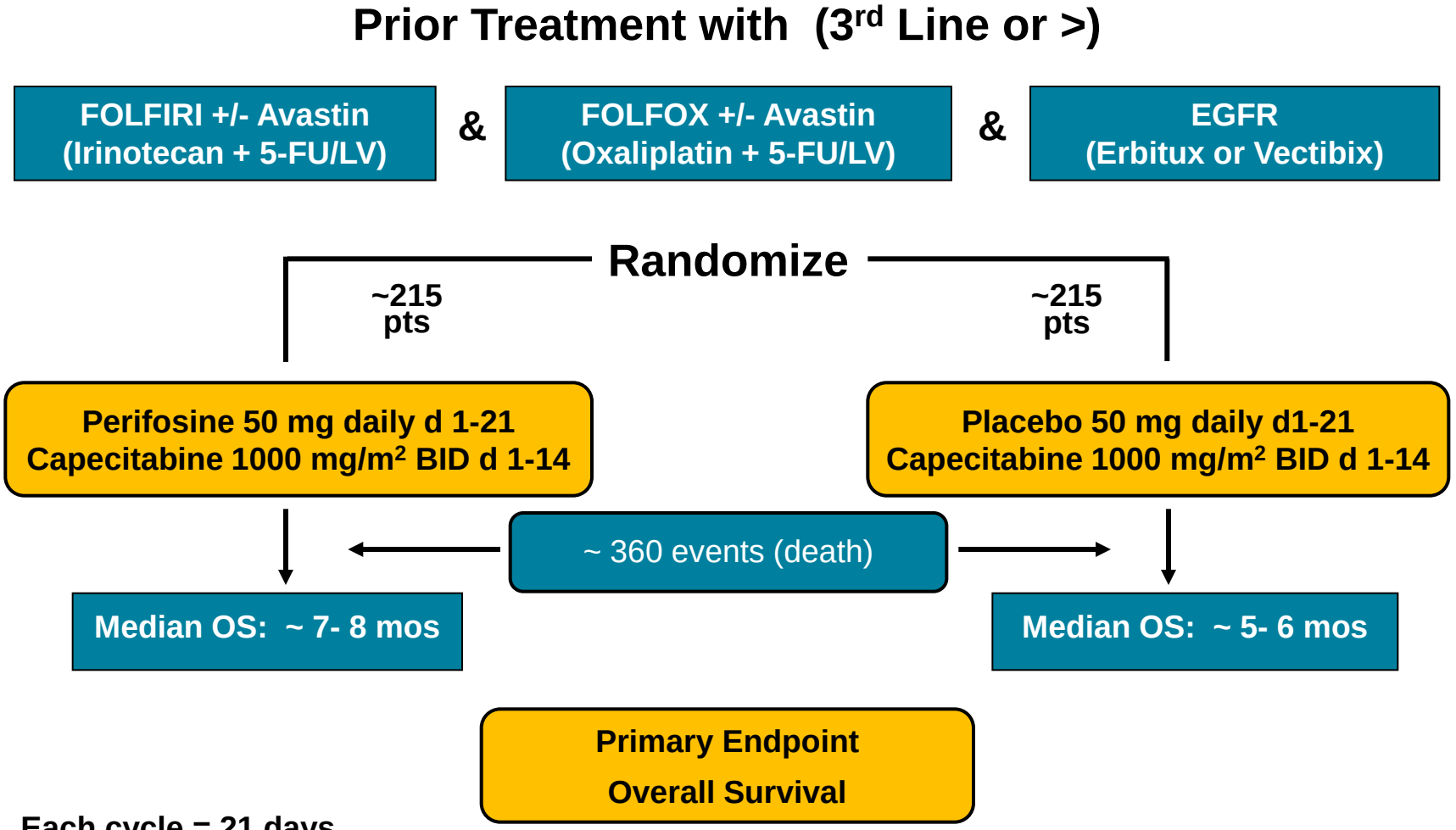


A = 11 patients [95% CI (4.7, 11.7)]

B = 14 patients [95% CI (7.3, 22.3)]

Ref.: D. Richards *et al*. ASCO 2010

Phase 3 X-PECT Study in Refractory Advanced CRC – SPA with FDA and Positive Scientific Advice by EMA



Perifosine in Multiple Myeloma

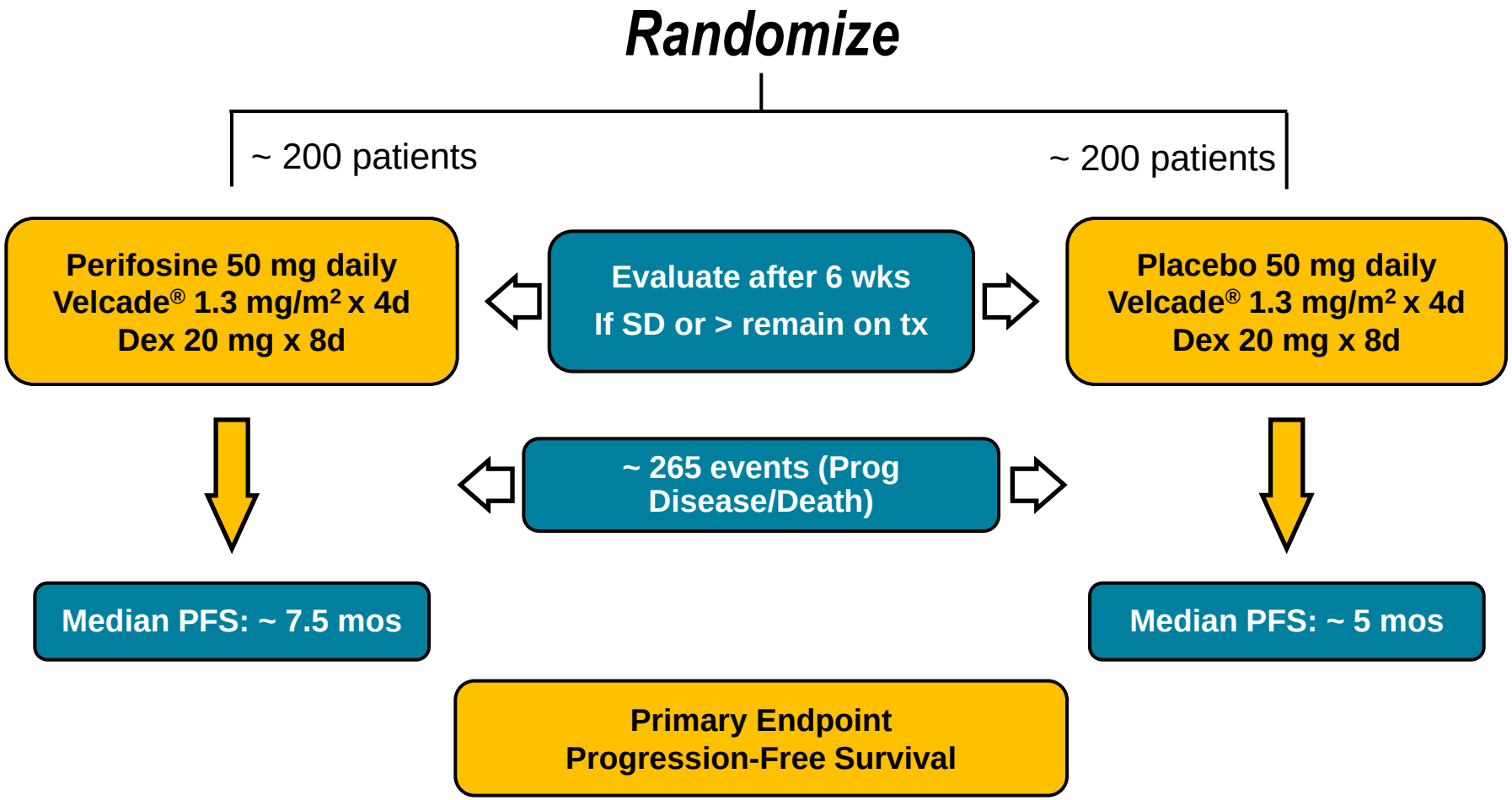
Phase 1/2 Results in MM

Perifosine + Velcade® +/- Dexamethasone show encouraging median progression-free survival (PFS) and overall response rate (ORR) in Velcade relapsed/refractory patients

	Patients (n)	ORR	Median PFS
Velcade® refractory	53	32%	5.7 months
Velcade® relapsed	20	65%	8.8 months
All patients	73	41%	6.4 months

Ref.: ASH 2009. Poster #1869

Phase 3 Study in MM – SPA with FDA and Positive Scientific Advice by EMA



Each cycle = 21 days

Phase 1/2 Results: Perifosine + Revlimid + Dex in Multiple Myeloma

Best response (N = 30 pts)	N (%)	Duration on Tx (mos) Median (range)	≥ PR	≥ MR
Near Complete Response (nCR)	4 (13%)	32+, 32+, 28, 6	50%	73%
Very Good Partial Response (VGPR)	3 (10%)	35, 7, 4		
Partial Response (PR)	8 (27%)	Median 5.5 (4 – 29)		
Minimal Reponse (MR)	7 (23%)	Median 12 (2 – 34)		
Stable Disease (SD)	6 (20%)	Median 3 (2 – 30)		
Progression (PD)	2 (7%)	9, 4 weeks		

- Median Follow-up: 27 months, Median PFS 10.8 months
- Median OS 30.6 months
- Peri Rev Dex was well tolerated and demonstrated encouraging clinical activity and overall survival
- Seven patients remain progression-free and 15/30 patients remain alive as of Nov. 2010
- Pharmacodynamic studies correlating pAkt levels and response are being finalized

Ref.: Jakubowiak et al. ASH 2010

Perifosine in Lymphomas

Patients responding to perifosine alone

UPN	Age	Dx	Mol. Cyto-genetics	Prior Tx	Tx Duration (mos)	Response (mos)
3	38	CLL	del(17p13)	Auto-SCT, Allo-SCT, DLI, Campath	15	12
18	70	CLL	Normal	R-FC, Campath, R-Benda	9	8
22	61	CLL	del(17p13)	Fluda, HDS and Auto-SCT	10+	9+
26	63	CLL	del(17p13)	FMCD/DHAP, F-FC, Campath, R-Benda	5	4

Conclusions

- Peri/Sor therapy had a good toxicity profile and was well tolerated (26 enrolled pts)
- Combination therapy has significant anti-lymphoma activity in relapsed/refractory HL
- Perifosine alone induced prolonged responses in high-risk, heavily pretreated CLL pts

Ref.: Carlo-Stella et al., ASH 2010

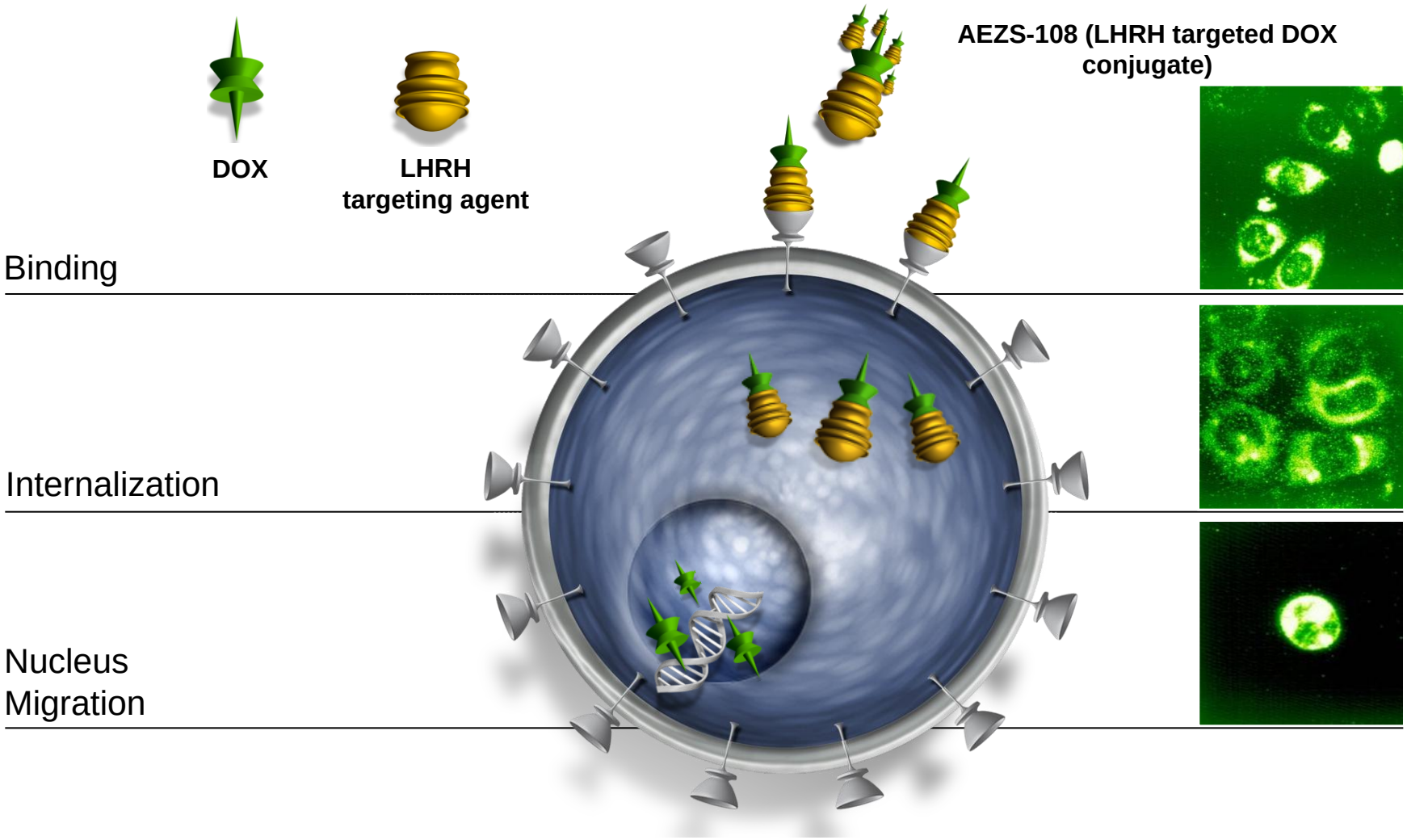
AEZS-108

AEZS-108 Rationale

LHRH receptor

- Ideal target for personalized medicine approach
  - Expressed in human cancer tissue (e.g. breast, endometrial, ovarian, prostate and bladder cancer)
  - Only detectable in reproductive tissue and pituitary
  - LHRH agonist can be used for targeting LHRH receptors
  - Companion diagnostic test can be developed

AEZS-108 – Trojan Horse for Cancer Cells



Ref.: Westphalen et al. Int J Oncol. 2000

AEZS-108 – Phase 2 Study in Endometrial and Ovarian Cancer

- Open-label study in patients with advanced or recurrent endometrial and platinum-resistant ovarian cancer
  - Study performed by German Oncology Group (AGO)
  - Two-stage design (Simon Design) with up to 82 patients, 41 patients for each indication
- Status
  - Response criteria for opening stage 2 were met for both indications
  - Preliminary evaluation revealed that primary endpoint of 5 or more responders was met for both indications
  - Positive ovarian cancer results presented at ASCO 2010
  - Positive endometrial cancer results presented at EORTC-NCI-AACR (ENA) 2010

AEZS-108 Phase 2 Study
Refractory Ovarian Cancer

Number (n)	PR n (%)	SD n (%)	CBR n (%)	TTP (months)	OS (months)
42	5 (11.9%)	11 (26.2%)	16 (38%)	3.5	15.6

- Treatment regimen: 267 mg/m^2 IV infusion every 3 weeks
- Toxicity
  - No cardiotoxicity was observed
  - Hematological toxicity was rapidly reversible
  - OS for Topotecan and Doxil: 8-9 months

Ref.: G. Emons et al. ASCO 2010

AEZS-108 Phase 2 Study
Recurrent Endometrial Cancer

Number (n)	CR n (%)	PR n (%)	SD n (%)	CBR n (%)	TTP (months)	OS (months)
39	2 (5.1%)	10 (25.6%)	17 (43.6%)	29 (74.4%)	7	14.3

- Treatment regimen: 267mg/m^2 IV infusion every 3 weeks
- Toxicity
  - No cardiotoxicity was observed
  - Hematological toxicity was rapidly reversible
  - Compares favorably to modern triple combination chemotherapy

Ref.: G. Emons et al. EORTC-NCI-AACR 2010

AEZS-108 Clinical Phase 2
Endometrial Cancer – Comparison Efficacy

Randomized Trials of Combination Chemotherapy in Metastatic Endometrial Cancer

Study and Regimen	Number	Response Rate (RR) (%)	Median OS (months)
Thigpen *et al.**	**356**		
Doxorubicin		**22**	**6.7**
Doxorubicin/cyclophosphamide		**33**	**7.3**
Fleming *et al.**	**273**		
Doxorubicin/cisplatin		**34**	**12.3**
Doxorubicin/cisplatin/paclitaxel		**57**	**15.3**

AEZS-108: RR = 31%, TTP = 7 months and OS = 14.3 months**

*No patients had received prior therapy with cytotoxic drugs
***Ref.: G. Emons et al. ENA 2010*

Ref.: Temkin S, Fleming G: Current treatment of metastatic endometrial cancer. Cancer Control 2009;16:3

Clinical Phase 2 – Comparison of ADR Profile with Doxil®

	Endometrial Cancer				Ovarian Cancer			
Drug:	**AEZS-108** **267 mg/m² q3w** (Dox: ≈77)		**Doxil** **50 mg Dox/m² q4w**				**AEZS-108** **267 mg/m² q3w**	
Organ System Source:	**Emons ENA 2010** (n = 43)		**Muggia JCO 2002** (n = 43)		***Gordon JCO 2001*** (n = 239)		**Emons ASCO 2010** (n = 43)	
-AE-Term	**All Grades**	**Grade 3/4**	**All Gr.**	**Gr. 3/4**	***All Gr.***	***Gr. 3/4***	***All Gr.***	***Gr. 3/4***
Gastrointestinal								
- Nausea	**39**	**2**			***46***	***5***	***79***	***2***
- Vomiting	**21**	**0**			***33***	***8***	***38***	***0***
- Nausea / Vomiting			**30**	**2**				
- Diarrhea	**9**	**2**			***21***	***3***	***12***	***0***
- Stomatitis	**2**	**0**	**(incl. in Mucosal inflammat.)**		***41***	***8***	***0***	***0***
General disorder /administration site								
- Fatigue // Asthenia	**25**	**2**			***40***	***7***	***26***	***0***
- Mucosal inflammation	**14**	**0**	**33**	**2**	***14***	***4***	***10***	***0***
Skin and subcutaneous tissue								
- Alopecia	**37**	**0**	**14**	**0**	***19***	***n.a.***	***50***	***0***
- Hand-Foot-Syndrome	**2**	**0**	**40**	**9**	***51***	***24***	***2***	***0***
- Rash					***28***	***4***		
Cardiac disorders								
- Cardiotoxicity	**0**	**0**	**9**	**2**	***0***	***0***	**1**	**0**
Nervous system								
- Neuropathy / Neurotoxicity	**5**	**0**	**14**	**5**	***0***	***0***	**4**	**0**

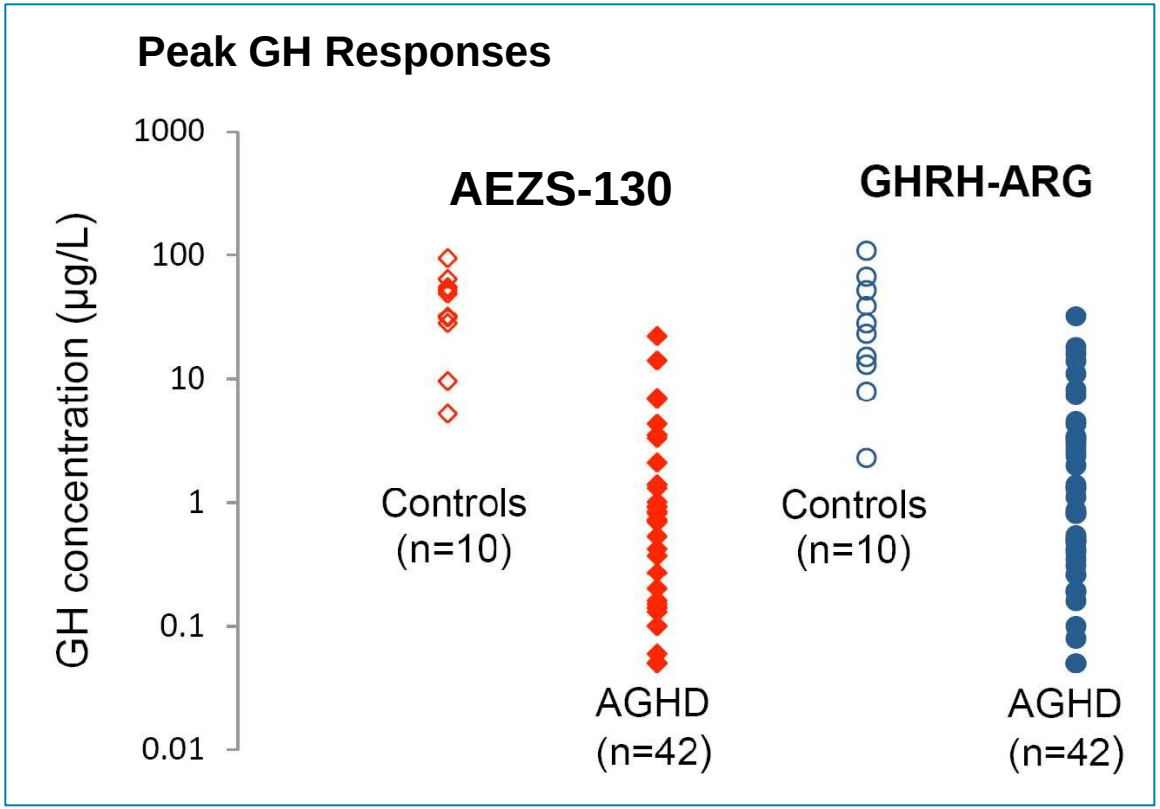
AEZS-130

AEZS-130 Overview

- Orally-administered ghrelin agonist
- 100 subjects treated in Phase 1
- Phase 3 as diagnostic test for adult growth hormone deficiency (“GHD”)
  - Orphan drug designation in U.S.
  - SPA granted by FDA in December 2010
- Potential for therapeutic indications
  - Cachexia associated with cancer, COPD and AIDS

AEZS-130 – Preliminary Phase 3 Results AGHD Diagnostic Test

AEZS-130 resulted in a greater mean separation between the normal controls and AGHD patients compared to GHRH-ARG



Ref.: BMK Biller et al. 2010 5th International Congress of the GRS-IGF Society in New York

AEZS-130 Phase 3 Trial Ongoing Under SPA

- SPA Agreement with FDA
  - Use existing data from the original trial (50 subjects)
  - Include 30 additional control subjects
  - Include 20 additional subjects (10 with AGHD and 10 matched control subjects)
  - All new subjects to receive 0.5 mg/kg body weight of AEZS-130

Financials

Consolidated Results

(in millions of US dollars) *(unaudited)*	For the three months ended	
	March 31, 2011 IFRS	**March 31, 2010 IFRS**
Revenues		
Sales and royalties	**7.1**	**5.7**
License fees and other	**0.3**	**0.7**
	7.4	**6.4**
Operating Expenses		
Cost of sales	**6.0**	**4.6**
R&D costs, net	**5.5**	**6.1**
SG&A expenses	**3.2**	**3.1**
	14.7	**13.8**
Loss from operations	**(7.3)**	**(7.4)**
Net finance (costs) income	**(1.9)**	**1.7**
Income tax expense	**(0.8)**	**—**
Net loss	**(10.0)**	**(5.7)**

Consolidated Cash Flows (Non-GAAP)

(in millions of US dollars) *(unaudited)*	**For the three months ended March 31, 2011**
Cash and cash equivalents – Beginning of period	**32.0**
Cash flows provided by operating activities	**0.8**
Cash flows provided by financing activities	**5.1**
Exchange rate fluctuation impact and other	**0.4**
Net change in cash and cash equivalents	**6.3**
Cash and cash equivalents – End of period*	**38.3**

* Excluding short-term investment of $2.8 million

Selected Information

(in millions of US dollars or of shares) *(unaudited)*	
Number of shares outstanding as of April 30, 2011	**95.2**
Price per share as of May 12, 2011	**$2.35**
Market capitalization	**223.7**
Cash, cash equivalent and S-T Investment (no debt) as of March 31, 2011	**41.1**
Pro forma entreprise value	**182.6**

Average daily volume shares traded*	**Last 3 months**
NASDAQ: AEZS	**3.2**
TSX: AEZ	**0.2**

**Source: Yahoo! Finance as of May 12, 2011*

2011 Milestones

2011 Milestones – Perifosine

- Results for Phase 3 X-PECT trial in refractory advanced colorectal cancer
- Multiple Myeloma Phase 3: additional centers outside U.S.
- Partnering: priority Asia
  - Yakult – Japan ✓
- Decision on the development of new indications such as CLL

2011 Milestones – AEZS-108

- Define regulatory strategy for endometrial cancer with FDA and EMA (Scientific Advice)
- Initiate first pivotal program in endometrial cancer (Phase 3)
- Ongoing Phase 1/2 study in refractory prostate cancer and refractory bladder cancer
  - Update on the studies' progress

2011 Milestones – AEZS-130

- Complete Phase 3 study as diagnostic test for AGHD under SPA in the U.S.
- File NDA as diagnostic test for AGHD in the U.S.
- Start proof-of-concept study in cancer induced cachexia