

ASX and Media release

15 April 2010

Circadian's VGX-100 Significantly Inhibits Tumour Growth in Animal Models of Human Cancer

- Data demonstrates efficacy of VGX-100 with other drugs in mouse models of prostate, pancreatic and brain cancers (glioblastoma).
- Treatment with VGX-100 plus anti-cancer drug Avastin and chemotherapy (docetaxel) significantly inhibited tumour growth and extended life-expectancy in mouse models of human prostate cancer above the effect seen with Avastin plus docetaxel alone.

Circadian Technologies Limited (ASX.CIR) today released data demonstrating that its lead anti-cancer therapeutic, VGX-100, significantly inhibits tumour growth in a variety of different animal models (tumour xenografts) of human cancer. These data indicate that, if clinically validated, VGX-100 has the potential to be a useful new treatment for some types of cancer.

VGX-100 is a fully human monoclonal antibody targeting the VEGF-C growth factor. VGX-100 inhibits the development of blood vessels that are required for tumour growth. Additionally, VGX-100 may inhibit cancer spread (metastasis) by suppressing the development of lymphatic vessels.

Highlights of the data are as follows:

- In a mouse model of human prostate cancer, treatment of animals with a triple combination of VGX-100, Avastin and docetaxel inhibited tumour growth by 83.4%, as compared to only 35.8% in animals treated with Avastin plus docetaxel alone.

In the same study, animals treated with the triple combination were four times as likely to survive until the end of the study as animals treated with docetaxel alone. Survival was increased 2.7 times over animals treated with docetaxel plus Avastin.

40% of animals treated with the triple combination were tumour-free at the conclusion of the study (tumours had been eradicated). This compares to none (0%) that were tumour free among the animals treated with docetaxel plus Avastin and 20% among animals treated with docetaxel alone.

- In a glioblastoma animal model, VGX-100 added to Avastin achieved a statistically significant improvement in tumour growth inhibition compared to untreated animals. The tumours in animals treated with VGX-100 plus Avastin were on average 42% smaller than untreated control animals.
- In a pancreatic cancer model, treatment with VGX-100 inhibited tumour growth similar to that achieved in animals treated with the drug Avastin.

The data will be presented at the upcoming American Association for Cancer Research Annual Meeting on 19 April 2010. A more detailed description and data figures are contained in the Appendix that follows.

“This is the first substantial data to directly demonstrate that blocking the VEGF-C pathway by VGX-100 can inhibit tumour growth in mouse models of cancer. Moreover, our data indicate that VGX-100 can act either by itself or in combination with approved drugs to significantly slow the growth of several different tumour types including prostate, pancreatic, and glioblastoma,” commented Dr. Megan Baldwin, Head of Preclinical Research and Development and senior author.

Robert Klupacs, CEO of Circadian stated that “We believe that the data we’ve obtained presents a strong case for clinical evaluation of VGX-100 and its possible future use as a new cancer treatment option. These data suggest that there may be some cancer indications for which VGX-100 is superior to Avastin – one of the world’s leading anti-cancer drugs - or may be effective where Avastin isn’t. It also suggests that there may be cases where adding VGX-100 to Avastin may significantly improve existing therapies.”

Circadian controls exclusive worldwide rights to an extensive intellectual property portfolio enabling it to develop antibodies targeting VEGF-C.

Circadian intends to file an Investigational New Drug (IND) application with the US FDA in the first half of 2011 in order to begin human clinical trials of VGX-100. This is subject to successfully completing the VGX-100 animal toxicology studies which evaluate whether VGX-100 is safe to be studied in humans.

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About Circadian Technologies Limited

Circadian (ASX:CIR) is a biologics drug developer focusing on cancer therapies. It controls exclusive worldwide rights to a significant intellectual property portfolio around Vascular Endothelial Growth Factor (VEGF) C and D. The applications for the VEGF technology, which functions in regulating blood supply, are substantial and broad. Circadian’s internal product development programs are focussed on novel anti-cancer therapeutics for large unmet needs. Circadian has also licensed rights to some parts of its intellectual property portfolio for the development of other products to ImClone Systems (a wholly owned subsidiary of Eli Lilly & Company - NYSE: LLY). ImClone Systems is currently developing an antibody-based drug targeting VEGFR-3 for the treatment of solid tumours.

About Circadian's pipeline of treatments for cancer

The clinical and outstanding commercial success of Avastin, an antibody that blocks the activity of VEGF-A, clinically validated anti-angiogenic drugs as an effective means of inhibiting solid tumour growth. By blocking the interaction of VEGF-A with its receptors, primarily VEGFR-2, the multi-billion dollar cancer therapeutic slows tumour growth by inhibiting blood vessel recruitment into the tumour, effectively starving tumours of essential nutrients and oxygen required for growth. Avastin, which is sold by Genentech, now part of Roche, had U.S. sales in 2009 of US\$5.7 billion and worldwide sales in excess of US\$8.6 billion. Avastin is approved by the US FDA in the following indications: metastatic colorectal cancer, non-squamous-cell lung cancer, metastatic breast cancer, glioblastoma, metastatic renal cell carcinoma.

VEGF-C and VEGF-D inhibitors, VGX-100, VGX-200 and VGX-300, are key therapeutics in Circadian's portfolio, which block these alternative stimulators for VEGFR-2. As such, they have the potential to block blood vessel growth in tumours resistant to anti-VEGF-A therapy and, when used in combination with drugs like Avastin, may completely shut down angiogenesis (the growth of blood vessels) mediated by VEGFR-2, resulting in greater clinical efficacy.

VEGF-C and VEGF-D are also the only known proteins to bind and activate VEGFR-3 which drives lymphatic vessel and tumour-associated blood vessel growth. Inhibitors of VEGF-C, VEGF-D and VEGFR-3 thus have therapeutic potential to inhibit not only primary tumour growth through their anti-angiogenic activities, but to also inhibit tumour spread or metastasis via the lymphatic vessels - a mechanism of tumour dissemination that is often the deadliest aspect of many tumour types and a mechanism that is not effectively blocked by anti-VEGF-A or anti-VEGFR-2 therapeutics.

Inherent risks of Investment in Biotechnology Companies

There are a number of inherent risks associated with the development of pharmaceutical products to a marketable stage. The lengthy clinical trial process is designed to assess the safety and efficacy of a drug prior to commercialisation and a significant proportion of drugs fail one or both of these criteria. Other risks include uncertainty of patent protection and proprietary rights, whether patent applications and issued patents will offer adequate protection to enable product development, the obtaining of necessary drug regulatory authority approvals and difficulties caused by the rapid advancements in technology. Companies such as Circadian are dependent on the success of their research and development projects and on the ability to attract funding to support these activities. Investment in research and development projects cannot be assessed on the same fundamentals as trading and manufacturing enterprises. Thus investment in companies specialising in drug development must be regarded as highly speculative. Circadian strongly recommends that professional investment advice be sought prior to such investments.

Forward-looking statement

Certain statements in this ASX announcement may contain forward-looking statements regarding Company business and the therapeutic and commercial potential of its technologies and products in development. Any statement describing Company goals, expectations, intentions or beliefs is a forward-looking statement and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the process of discovering, developing and commercialising drugs that can be proven to be safe and effective for use as human therapeutics, and in the endeavor of building a business around such products and services. Circadian undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise. Actual results could differ materially from those discussed in this ASX announcement.

Prostate Carcinoma Xenograft Model (PC-3)

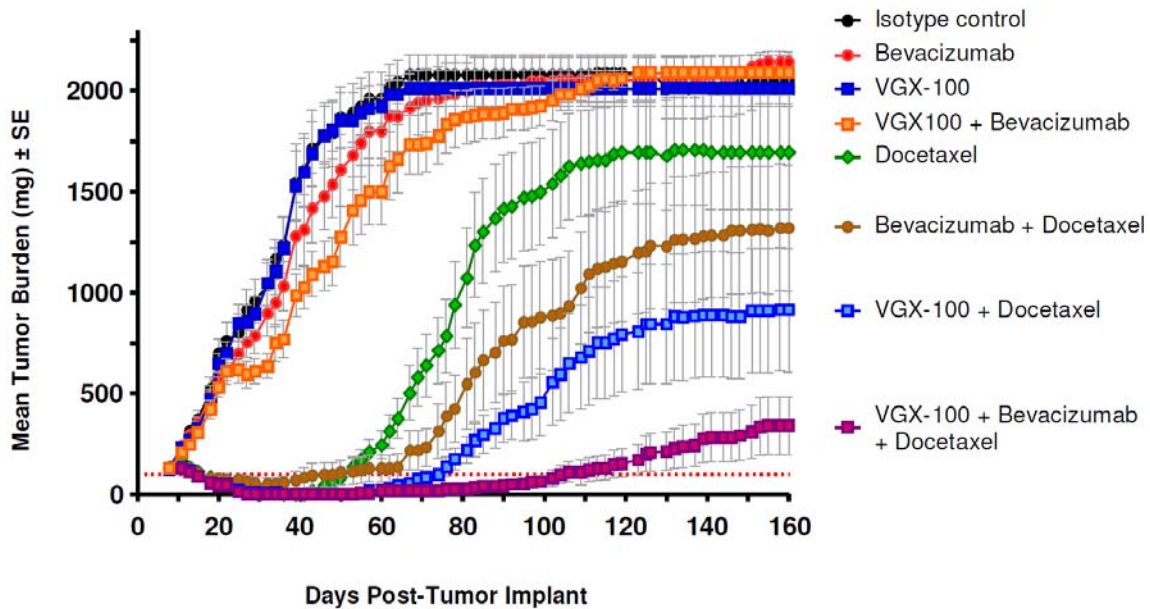


Figure 1. VGX-100 Significantly Enhances the Anti-Tumor Efficacy of Chemotherapy and Avastin in a Prostate Cancer Model. The figure presents the mean prostate cancer tumor size in animals receiving various treatments. The widely used chemotherapeutic, docetaxel (green symbols), significantly reduces tumor growth rate compared to the control (black symbols). Adding VGX-100 to docetaxel results in a statistically significant improvement in tumor growth inhibition. Furthermore, adding VGX-100 to the combination of Avastin® (Bevacizumab) + docetaxel also achieved a significant improvement in tumor growth inhibition compared to bevacizumab + docetaxel.

How the experiments were performed: Cells from a human prostate tumor line (PC-3) were implanted subcutaneously (under the skin) into mice and grown until the tumors reached an average size of 123-134 mg. At this time, the animals were placed in different groups and treatment was initiated. Mice were treated twice weekly with the indicated dosage of either VGX-100 (40 mg/kg), bevacizumab (10 mg/kg), a combination of the two, or a negative control antibody (Isotype Control). In the groups indicated, docetaxel (10 mg/kg) was administered intravenously weekly for the first three weeks. Tumor size was measured 2-3 times weekly with calipers. Vertical bars indicate the standard error of the mean for tumor weight for each time point in each treatment group. 10 animals per treatment group.

PC-3 Tumor Weight at Day 160

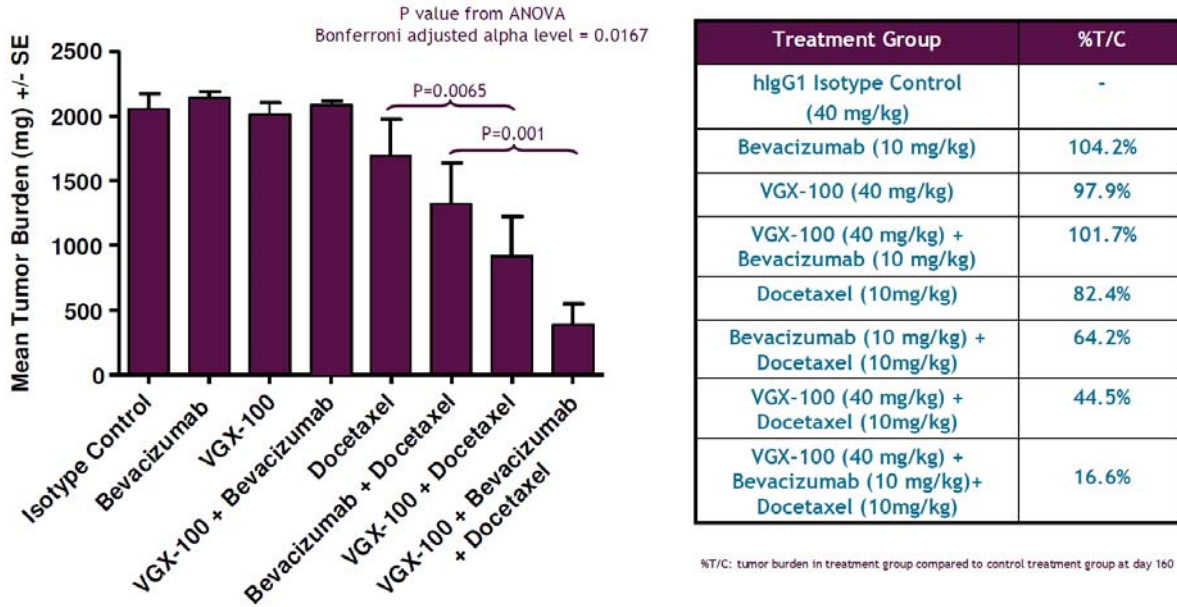


Figure 2. Summary of Tumour Growth Inhibition in the Prostate Cancer Model. At the conclusion of the experiment (day 160), tumors in the animals treated with the triple combination of VGX-100 + bevacizumab + docetaxel were 16.5% the size of tumors in the control animals. Tumor growth inhibition by the triple combination was superior to bevacizumab + docetaxel with a p-value of 0.001, which exceeds the threshold for statistical significance of 0.0167. VGX-100 + docetaxel was superior to docetaxel alone with a p-value of 0.0065, which also exceeds the threshold for statistical significance. **How the analysis was performed:** p-values were calculated using ANOVA of the area under the curve measurements. The Bonferroni-adjusted alpha level of 0.0167 was determined as the threshold for statistical significance.

VGX-100 Treatment in Combination with Docetaxel and Bevacizumab Enhances Survival

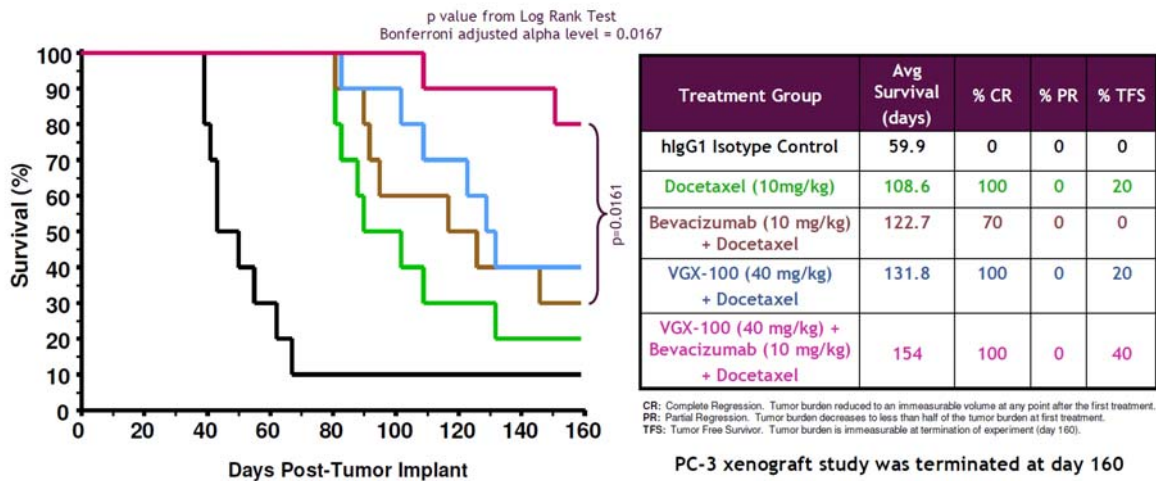


Figure 3. Addition of VGX-100 to Docetaxel + Bevacizumab (Avastin) Improves Survival in Prostate Cancer Model. The figure on the left represents the percentage of mice in each treatment group in the prostate cancer study that survived as a function of time. Survival of animals in the group treated with the triple combination of VGX-100 + docetaxel + bevacizumab was the highest (80%), and exceeded that in the group treated only with docetaxel + bevacizumab by a statistically significant margin (p-value 0.0161). The table to the right summarizes average survival duration for each treatment group. 40% of animals treated with the triple combination had no detectable tumors at the conclusion of the study (Tumor Free Survivors, TFS). This compares to none of the animals treated with bevacizumab + docetaxel and 20% of the animals treated with docetaxel alone. Animals with tumors larger than 2g were euthanized.

Pancreatic Carcinoma Xenograft Model (KP4)

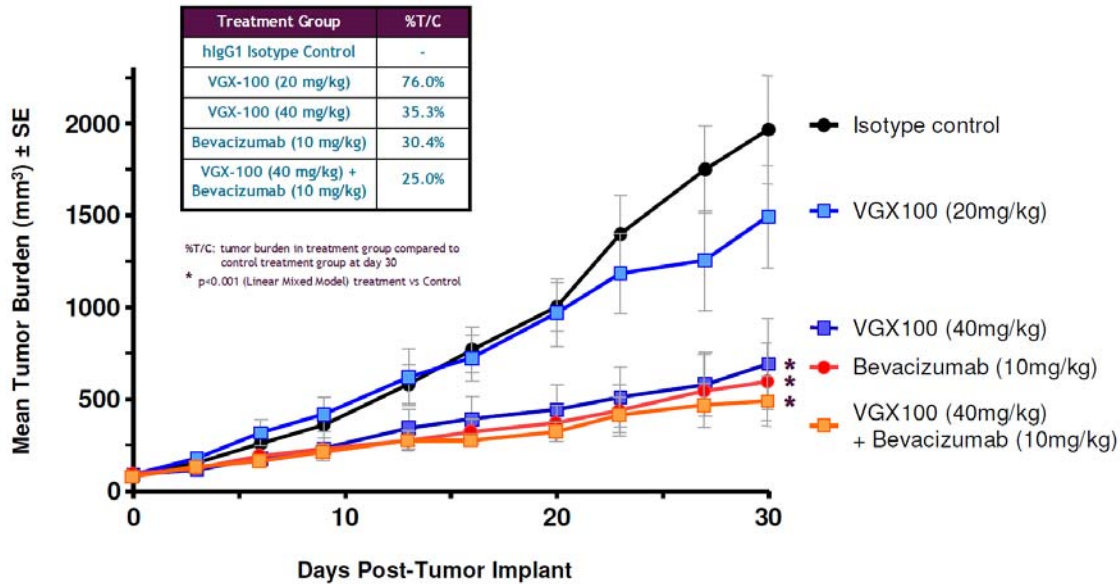


Figure 4. Inhibition of Pancreatic Tumor Growth by VGX-100. Pancreatic tumors in mice treated with 40 mg/kg VGX-100 were on average 35.3% the size of tumors in control mice. This is similar to the size (30.4%) of tumors treated with the approved anti-cancer drug, Avastin (Bevacizumab). **How the experiments were performed:** Cells from a human pancreatic tumor line (KP4) were implanted subcutaneously (under the skin) into mice and grown until the tumors reached an average size of 80-100 mm³. At this time, the animals were placed in different groups and treatment started. Mice were treated twice weekly with the indicated dosage of either VGX-100, bevacizumab, a combination of the two, or a negative control antibody (Isotype Control). An asterisk (*) indicates that there is a statistically significant difference in the average size of tumors in the treatment group compared to the control (analysis by ANOVA). Tumor size was measured 2-3 times weekly with calipers. Size of tumors relative to controls is calculated after 30 days of treatment. Vertical bars indicate the standard error of the mean for tumor weight for each time point in each treatment group. 7 animals per treatment group.

Glioblastoma Xenograft Model (U87MG)

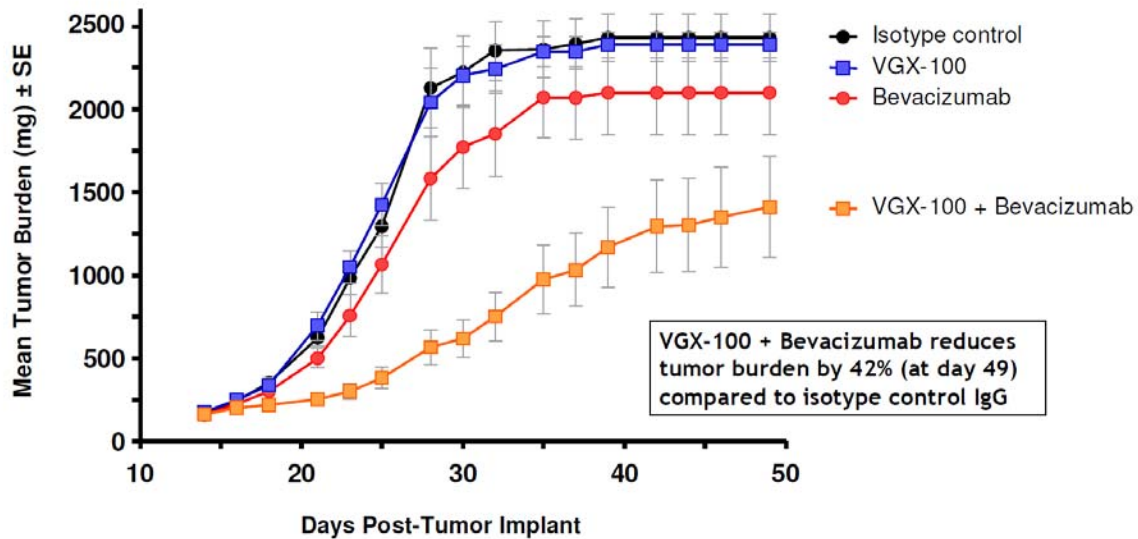


Figure 5. VGX-100 Enhances the Anti-Tumor Activity of Avastin (Bevacizumab) in a Brain Cancer (Glioblastoma) Model. Administered alone, in this model bevacizumab has only a minor effect in slowing the growth of U87MG brain cancer tumors, and VGX-100 has no significant effect. Used in combination however, VGX-100 plus bevacizumab achieves a 42% reduction in tumor growth, which is a significant inhibition of tumor growth compared to treatment with the control antibody (analysis by Student's t-test at day 49). **How the experiments were performed:** Cells from a human glioblastoma tumor line (U87MG) were implanted subcutaneously (under the skin) into mice and grown until the tumors reached an average size of approximately 150 mg. Mice were treated twice weekly with either VGX-100 (40 mg/kg), bevacizumab (10 mg/kg), a combination of the two, or a negative control antibody (Isotype Control). Tumor size was measured 2-3 times weekly with calipers. Vertical bars indicate the standard error of the mean for tumor weight for each time point in each treatment group. 10 animals per treatment group.