

## **Progen Pharmaceuticals Ltd Publication on PG11047**

**Brisbane, Australia, 14<sup>th</sup> September 2010.** Progen Pharmaceuticals Ltd (ASX:PGL, OTC:PGLA) announced today that data from a joint research effort between Lund University in Sweden and Progen Pharmaceuticals was published electronically (ahead of print) in the journal *Anti-Cancer Drugs*.

The paper, entitled "Reduction of the putative CD44+CD24- breast cancer stem cell population by targeting the polyamine metabolic pathway with PG11047" was co-authored by Helena Cirenajwis, Sandra Smiljanic, Gabriella Honeth, Cecilia Hegardt, Laurence J. Marton, and Stina M. Oredsson.

PG11047 is a polyamine analog that has been studied extensively in preclinical as well as in clinical studies. A recent publication entitled "A systems analysis of the chemosensitivity of breast cancer cells to the polyamine analogue PG11047" (*BMC Medicine* 2009, 7:77 doi:10.1186/1741-7015-7-77) describes the effects of PG11047 in a panel of 48 breast cell lines that mirror many transcriptional and genomic features present in primary human breast tumours. The objective of that study was to use a systems approach to study the relative effects of PG11047 across breast cancer cells derived from different patients and to identify genetic markers associated with differential cytotoxicity. A 13-gene transcriptional marker set was developed as a predictor of response to PG11047 that warrants clinical evaluation.

The present study focuses on a single breast cancer cell line that was studied in depth. This cell line is a trastuzumab (Herceptin) resistant cell line that over expresses HER2 (Human Epidermal growth factor Receptor 2), the target of Herceptin. There is growing data to support the existence of Cancer Stem Cells (CSCs) in breast as well as in other tumour types. These CSCs possess inherent properties of self-renewal and differentiation, and express a unique set of genes. These features favour the promotion of tumour recurrence and metastasis. Thus, optimal tumour therapy should target these uniquely malicious cells.

The study showed that PG11047 targeted the CSC population of this tumour line specifically by interfering with several stem cell-related properties, such as self-renewal, differentiation, motility, and the cancer related "mesenchymal" phenotype. Of interest, DFMO (a compound that along with PG11047, interferes with the biosynthesis of the polyamine pathway however via a different mechanism of action) did not produce the same effects as did PG11047.

PG11047 has been studied in multiple phase I human clinical trials and one phase II trial, both alone and in combination with each of 6 other approved drugs and has displayed limited toxicity and promise with regard to efficacy.

### **ENDS**

#### **About Progen Pharmaceuticals Ltd**

Progen Pharmaceuticals Limited is a biotechnology company committed to the discovery, development and commercialization of small molecule pharmaceuticals primarily for the treatment of cancer. Progen has built a focus and strength in anti-cancer drug discovery and development. Progen has operations in Australia and the United States of America.  
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