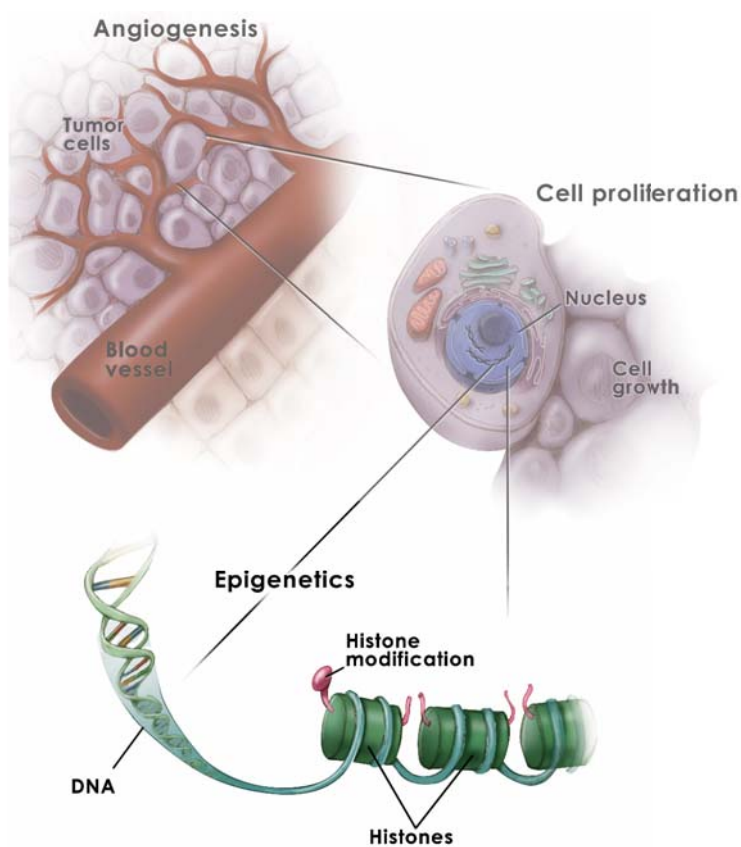


PROGEN EPIGENETICS FACTSHEET

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ABOUT EPIGENETICS AND CANCER



Progen's three cancer platforms target different aspects of the biology of cancer, angiogenesis, cell proliferation, and epigenetics. This factsheet is focused on the **epigenetics** platform.

Cancer cells have lost their ability to divide in a controlled fashion. Uncontrolled cell reproduction begins when a cell accumulates enough mutations to activate certain growth promoting genes (oncogenes) and de-activate

certain protection genes (suppressor genes) that are built into the genetic fingerprint of a person. The mutated cell seems to ignore the instructions to limit its self replication and soon it becomes many cells and continues to grow.

Epigenetics refers simply to a number of processes that control gene expression (ie switching genes on or off) other than by mutation. Epigenetic processes are responsible for many of the differences in, for example, identical twins, which are genetically the same. The term gene silencing is generally used to describe the "switching off" of a gene. That is, a gene which would be expressed (turned on) under normal circumstances is switched off.

Epigenetics in general, and gene silencing in particular, is rapidly becoming a well-defined target in cancer and Progen is excited to be involved in

this new area of research. The area of epigenetics is currently attracting significant capital and excitement from investors, despite an otherwise downturn in the industry.

Two new startup companies have been launched in the past 6 months with backing from leading life sciences venture funds. The venture capital firms MPM Capital and Kleiner Perkins Caufield & Byers have launched EpiZyme Inc., an epigenetics company focused on drugs for cancer and other diseases. Former Millennium CEO, Mark Levin, and Third Rock Ventures in Boston, have committed \$32 million in Series A financing to a new cancer epigenetics company, Constellation, that is based in Boston. More established drug companies, such as Novartis AG and AstraZeneca, are also pursuing epigenetics and two biotech companies that were recently sold for billions of dollars, MGI Pharma Inc. (USD\$3.9B) and Pharmion Corp. (USD\$2.9B), have both developed epigenetic drugs.

PROGEN'S EPIGENETICS PRODUCTS

Much of the focus in epigenetics is on a group of enzymes that help control how tightly DNA is coiled around a group of proteins called histones. Genes can only be activated when key pieces of DNA are unwrapped, allowing the data to be accessed to manufacture proteins. In cancer, the coiling of DNA may be dysregulated, resulting in the silencing of important growth regulatory genes called tumor suppressor genes. The goal with most of the epigenetic research is to use drugs to control the way DNA is coiled, so that certain tumor suppressor genes can be switched back on.

One family of well established epigenetic targets are the histone deacetylases (HDACs). Activation of these enzymes can contribute to the aberrant silencing of genes.

There are over a dozen compounds in its various stages of development

target these enzymes, and Merck & Co. Inc. markets one, Zolinza (vorinostat), to treat advanced cutaneous T cell lymphoma (CTCL). Another enzyme that is responsible for epigenetic silencing of genes is lysine specific demethylase 1 (LSD1). LSD1 functions by removing methyl groups from specific histone sites that are needed for genes to be active. Thus in cancer, like HDACs, LSD1 contributes to the turning off of important tumor suppressor genes.

We have very recently discovered a new class of compounds that inhibit the activity of LSD1, resulting in the



Genetically identical cats, yet the genes are expressed differently, resulting in different coat colours

re-expression of genes whose inactivation is important in the genesis of cancer. Thus, we have demonstrated that LSD1 represents an excellent target for the development of drugs that target its activity in cancer cells. The primary goal of our current studies

is to determine if inhibition of LSD1 with our new compounds offers potential therapeutic advantages over existing strategies targeting aberrant epigenetic gene silencing. The objective of this research is to replenish and to diversify the Company's product development portfolio by creating a robust drug pipeline. It is critical that this activity is guided towards commercially-relevant targets, and the development of products or new investigational drugs that are novel, marketable and have significant value to the Company. Strategic input is provided as part of our corporate development process to build a competitive pipeline of new opportunities that will aid in the Company's sustainability.

Progen possesses a strong proprietary position covering these compounds, exemplified by issuance of 9 US 16 that LSD1 foreign patents, and 11 US and 43 foreign pending applications.

With Progen's strong and established epigenetics research efforts and early-stage compounds, we are at the forefront of this new and exciting area in cancer therapeutics.

FURTHER READING

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SAFE HARBOUR STATEMENT

This factsheet may contain forward-looking statements that are based on current management expectations. These statements may differ materially from actual future events or results due to certain risks and uncertainties, including without limitation, risks inherent in the extensive regulatory approval process mandated by the United States Food and Drug Administration and the Australian Therapeutic Goods Administration prior to the commercialization of any of our product candidates, including PI-88, the risk that the Phase 2 study results described herein are not predictive of the Phase 3 studies which we intend to initiate, risks attendant to delays in obtaining the necessary approvals for clinical testing of our product candidates, risks associated with delays in patient recruitment for our planned Phase 3 clinical and other trials, delays in the conduct and completion of our clinical trials, in particular our planned phase 3 clinical trials for PI-88, risks associated with our failure to demonstrate adequate efficacy and safety data in our planned phase 3 clinical trials to advance the development of PI-88, risks associated with our inability or failure to meet applicable regulatory standards and receive regulatory approval for commercialization of PI-88, risks associated with the market acceptance of PI-88, PI-166 and any of our other product candidates, if approved for commercialization, risks associated with our inability to manufacture or otherwise obtain adequate supplies of PI-88, our future capital needs, general economic conditions, and other risks and uncertainties detailed from time to time in our filings with the Australian Securities Exchange and the United States Securities and Exchange Commission. Moreover, there can be no assurance that others will not independently develop similar products or processes or design around patents owned or licensed by the Company, or that patents owned or licensed by the Company will