

## Mirna Analytics LLC

**Business Summary:** Mirna Analytics is developing microRNA biomarkers, a platform technology that is applicable to many diseases and to humans and animals. We currently focus on pulmonary hypertension (PH). PH is a debilitating disease with increased pulmonary artery pressure. The most severe form mostly affects women, shortens the life to approx. 5 years post diagnosis. In the US, this severe form has 3000 newly diagnosed cases per year and 30,000 to 60,000 affected patients in total. Timely diagnosis and prompt evaluation of treatment efficacy prolongs life and enhances quality of life. There is no cure and there are no economic non-invasive diagnostics or disease management options.

MicroRNA biomarkers will provide a cost effective way for monitoring the progression of PH. Due to the minimal invasiveness of our assay, patients will be tested easily and safely.

**Value Proposition:** The increased survival of patients with the severe form of pulmonary hypertension (WHO group 1) has led to an increased burden of re-hospitalizations with a reduction in the quality of life and burden to the hospitals. With mean hospitalization costs of \$39,000 to 70,000 per hospital stay of more than 2 weeks. Re-hospitalization occurs within 30 days in more than 10% of patients and within 1 year for the majority of patients. Optimized management which is made possible by combining the availability of newly FDA approved drug treatments with an effective biomarker test is expected to reduce re-hospitalizations by 50% or more. MicroRNA-based biomarkers are equally effective in human and animals. Mirna Analytics is optimally positioned to tap into the \$15 billion pet wellness market including the equine veterinary market and the \$88 billion cattle industry.

**Markets:** There is a clear unmet need for a minimally invasive test in a multitude of diverse markets. Specifically, our estimated PH biomarker human testing can reach over \$20 million a year; equine PH prevention is \$25 million; in cattle industry we can provide annually \$175 million saving to cattle ranchers (exemplified in Colorado); and in pet market (dogs at risk for heartworm disease) we estimate market of \$10-20 millions in the next few years after establishing biomarker signature.

**Competition:** Companies that are developing microRNA signatures for the prognosis, diagnosis, and treatment efficacy of Pulmonary Hypertension are our competitors. To the best of our knowledge there are no competitors in our specific market, however, there are companies that use microRNA signatures to diagnose several types of cancers. To name a few, Rosetta Genomics and Gensignia are developing microRNA signatures for cancers. These companies are not present in the veterinary field. Etalon Diagnostics, being an exclusively equine company, provides indirect competition. Etalon provides gene analysis targeting biological problems that do not overlap with the microRNA tests.

### Management:

**Gabriele Grunig**, DVM, PhD (Co-founder, President). With over three decades of experience in veterinary medicine, immunology and lung biology she is currently Professor at the Department of Environmental Medicine & Pulmonary Medicine, NYU Medical Center.

**Serhiy Pylawka**, RN, MS (Co-founder, Science Officer). His 15-year experience spreads across medicine, ciliates, immunology, and neuroscience as an expert molecular biologist and microscopist. As Scientific Officer, Mr. Pylawka has adapted his skills to transforming microRNAs into biomarkers.

**Strategic Partners:** At Harlem Biospace, Mirna Analytics has laboratory space and equipment to conduct the work as well as business guidance, and support via NYCEDC. Mirna Analytic is well networked as a participant in the NY Pulmonary Hypertension Center, the national PVDOMICS program and with groups and with major pulmonary hypertension centers in the US and Europe.

### Financials:

Year	Past	Current	2nd, project	3rd, project	4th, project	5th, project
Investment	\$50,000	\$70,000	\$30,000	\$475,000	\$1,900,000	\$22,800,000
Income	\$0	\$5,000	\$145,000	\$500,000	\$2,000,000	\$24,000,000
Profit	\$0	\$0	\$0	\$25,000	\$100,000	\$1,200,000



MicroRNA for better diagnostics & disease management in pulmonary hypertension

**Mirna Analytics LLC**

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