



Motif BioSciences, Inc.

A Discovery Engine for the Pharmaceutical Industry

Drug Discovery: New opportunities

Motif BioSciences has expanded its scientific focus and business model into a discovery engine for the pharmaceutical industry. The company is taking advantage of the radical shift in the pharmaceutical industry's model of drug discovery towards an increasing reliance on partnerships or licensing arrangements with small companies to support its pipeline. This shift presents numerous opportunities for smart new players such as Motif in the drug discovery arena:

- Firstly, the number and value of licensing-in transactions from small companies to Big Pharma is growing rapidly, with up-front fees of \$20-70 million or more being paid for new drug candidates with proof of concept in man;
- Secondly, industry consolidation has resulted in our ability to recruit highly experienced senior management talent;
- Thirdly, the advent of low cost outsourcing companies in Asia and Eastern Europe with proven expertise in chemistry and other disciplines has made it possible for Motif to implement the expansion of its business model without substantial internal infrastructure.

A World Class Team

Motif has recruited the "A" team of drug discovery: senior drug discovery and development executives who have spent decades at the world's leading pharmaceutical companies successfully developing major new drug classes. Their disciplines include medicinal and computational chemistry, biology, toxicology, pharmacology, drug metabolism and drug development. The caliber, track record and vast experience of the Motif team, and their close involvement in guiding every step of the plan, make this a powerful engine for drug discovery.



Name / Company	Drug	Disease Area	Peak Sales (\$B)	Role
John Amatruda, MD SVP, Merck	Januvia	Diabetes	2,0	Clinical Development Leader
Malcolm MacCoss, PhD VP, Merck	Januvia, Emend, ≥ 100 PCCs	Diabetes CINV	2,0 0,3	Co-Inventor Co-Inventor / Team Leader
Mathew Wyvratt, PhD Exec. Dir, Merck	Vasotec, Prinivil, Januvia,	Hypertension Hypertension Diabetes	2,3 1,7 2,0	Co-Inventor Co-Inventor Core Team Leader
James McDonald, PhD SVP, Schering Plough Merck	Zetia, SP Vytorin, SP Zocor, Merck	Lipids	2,2 2,1 5,6	Senior leadership of pre-clinical program Pre-Clinical Team Leader
Euan McIntyre, PhD VP, Merck	Emend, Merck Januvia, Zetia, SP	CINV Diabetes Lipids	0,3 2,0 2,2	Co-Chair, Early Dev. Team Mechanism of Action Leader
Gerald Miwa, PhD VP Millenium	Sustiva, Velcade,	HIV/Aids Cancer	1,3 1,2	Pharmacology & metabolism Leader Team Leader
Nicholas Livingston, PhD VP GSK, Bayer	Glyset, Bayer Precose, Bayer Albugon, GSK	Diabetes Diabetes Diabetes	Phase III	Pre-clinical Leader Biology Leader Discovery Medicine Leader
Jerauld Skotnicki, PhD Wyeth	Torisel, PCCs: >10 Patents: 43	Cancer		Co-Inventor Leader in Chemistry Pre-Clinical Development
Mark Greenlee, PhD Merck	PCCs: 9 Patents: 32	Infectious Disease, Womens Health		Inventor
Simon Kearsley, PhD, Merck	Multiple Programs			Leader, Computational Chemistry
P. Kalyanaraman, Ph.D., J.D., Schering Plough	Muiltple Programs			Senior Patent Counsel

Best-in-Class Drugs

Motif has developed a detailed plan to develop proprietary, best-in-class new drug candidates, building on the experience of our team in Lead Hopping: taking proven, first-in-class drugs developed by the pharmaceutical industry and improving on their chemical structures and clinical profiles to develop best-in-class new drug candidates. In drug discovery, the first-in-class compound is rarely the best-in-class drug that enjoys superior performance in the market.

Over the past few months, the Motif team has completed an extensive review of first-in-class drugs that have clearly defined but addressable liabilities. We have applied a rigorous set of criteria designed to maximize the probability of success of each project, including: validated drug targets; well understood lead molecules with clear proof of concept of the mechanism in man; tractable chemistry; potential for meaningful clinical differentiation versus the first in class drug; and intellectual property freedom to operate.



Motif's first five projects are in migraine, obesity, infectious disease, rheumatoid arthritis and overactive bladder; each project is supported by a well articulated rationale and plan to develop a best-in-class new drug candidate within approximately four years.

The Motif drug discovery team is based in the United States, and is in the process of partnering with specialized contract research organizations in China and India to conduct the chemistry, biology and pre-clinical development of our compounds in an iterative and highly dynamic process.

A Distinctive and De-risked Model

We have built our drug discovery plan on a de-risked research and business model. Our research focus is limited to targets, mechanisms and drugs which have *already* been proven to work. Our research scope excludes the speculative early phase of drug discovery, including novel mechanisms and experimental, first-in-class compounds, of biotech companies. It excludes the expensive, risky late phase of drug development undertaken by pharmaceutical companies to achieve regulatory approval of new medicines. The Motif approach is relatively quick, predictable, low cost and extremely focused: to build on the knowledge of proven, first-in-class compounds; to leverage the expertise of our team in "smart and nimble" chemistry, pre-clinical and early clinical development; to develop proprietary best-in-class new drug candidates to the proof of concept stage within approximately four years, and to license them out to pharmaceutical companies. We are very confident about the timelines, and we believe that even within that four year period we will be creating value that we can monetize in various ways almost continuously, a process which has already started. Copious industry data shows that the up-front fees being paid by pharmaceutical companies for good drug candidates at this stage of development range from \$ 20 -70 million upwards. In addition, there are potential down-stream royalties and milestone payments that could accrue to Motif if our drug candidates make it further into development and to market, but none of these potential revenues have been built into our business model.

Motif is seeking to raise additional capital to progress the drug discovery program and to start chemistry and biology on at least four projects. The company's approach is to conduct its programs and to plan its funding needs in a modular manner, starting with a relatively modest amount and scaling up to the next development stage of each project & the initiation of new projects, based on specific milestones and deliverables achieved. The company is confident that the first key milestones- patent applications on proprietary, potentially best-in-class pre-clinical candidates- can be achieved within the first 18 months with this investment.