

**2008 North American Osteoporosis  
Technology Innovation of the Year Award****Merrion Pharmaceuticals**

The 2008 Frost & Sullivan Osteoporosis Technology Innovation of the Year Award is presented to Merrion Pharmaceuticals. This Award is in recognition of the company's successful application of its innovative gastrointestinal permeation enhancement technology (GIPET™) to create an improved version of alendronate, MER103. This innovative and novel technology has resulted in MER103 yielding benefits such as increased bioavailability while offering increased safety and convenience compared to the currently marketed Osteoporosis drug Fosamax (alendronate).

**Osteoporosis – A Silent Disease**

Osteoporosis is the most prevalent bone disease in the United States and is characterized by accelerated bone loss which results in brittle and weak bones that are easily fractured. Normally, bones are continuously regenerated with new bone replacing old bone. However, in older individuals this process is less efficient and more bone is lost than is replaced with new bone. This results in bones that are thinner and weaker and can lead to diseases such as osteoporosis and osteopenia. Patients with osteoporosis have an increased risk of fractures particularly of the hip, spine, and wrist. Currently, an estimated 11.2 million Americans have osteoporosis with an additional 46.4 million Americans having osteopenia or low bone mass. Patients with osteopenia are considered at risk for developing osteoporosis. As these diseases become increasingly more prevalent in the U.S. the importance of new treatment options becomes more apparent.

**Gastrointestinal Permeation Enhancement Technology - GIPET™**

As a way to improve the bioavailability of oral products, Merrion has developed a cutting-edge technology called gastrointestinal permeation enhancement technology (GIPET™) which can improve a poorly permeable oral medication's bioavailability. Not only does this allow for less of the active ingredient to be used to achieve the same therapeutic benefit, but it also can allow for more convenient dosing schedules. For example, some medications that have poor bioavailability need to be taken by injection or require a complicated dosing regimen designed to maximize the absorption of the active ingredient in the medication. These types of delivery hurdles can result in adverse issues such as low patient compliance. However, with Merrion's GIPET™ technology, medications that are not well absorbed can be evolved to yield

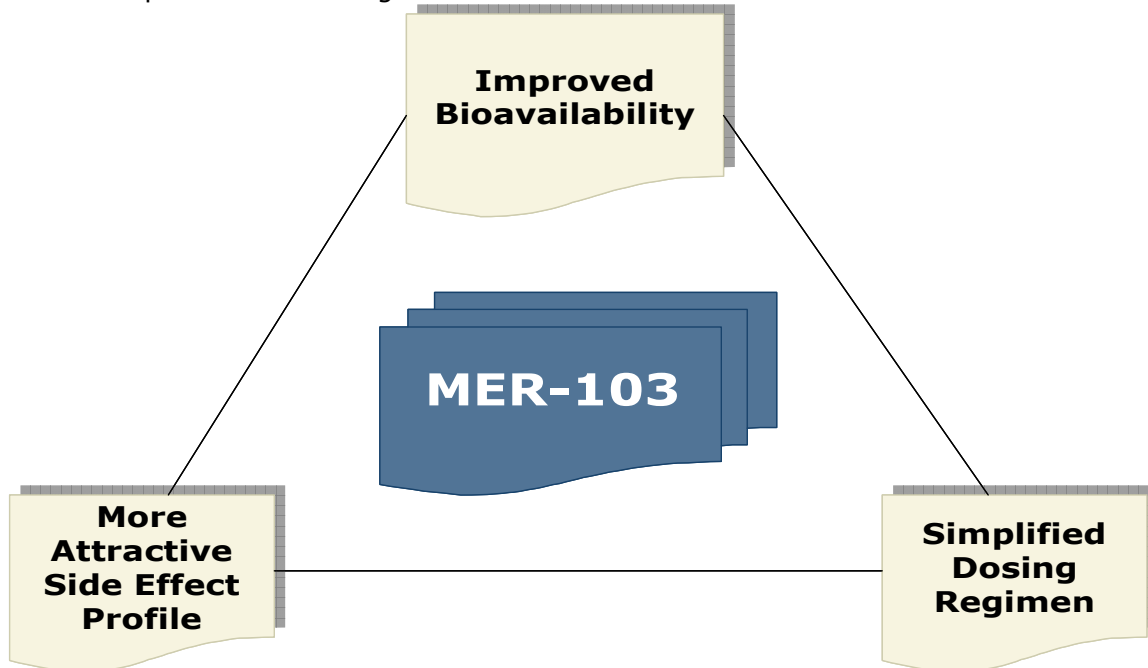
improved performance in characteristics such as bioavailability, drug efficacy, and safety. Moreover, the use of this technology does not require any chemical modification to the active ingredient.

### **GIPET™ Technology Solution Improves Osteoporosis Drug**

MER-103 is a novel formulation of alendronate, a popular bisphosphonate that is the active ingredient found in Fosamax, the U.S.'s top selling medication for osteoporosis in 2008. Alendronate works by reducing the activity of osteoclasts, the cells that break down bone, and has proven effective at reducing the incidence of hip and spine fractures and improving bone mineral density. However, the currently available form of alendronate has poor bioavailability and is associated with unpleasant side effects including esophageal and stomach irritation. Moreover, to increase bioavailability and to minimize gastrointestinal side effects, patients are faced with a complicated dosing regimen. Dosing recommendations for the currently marketed drug are that it needs to be taken with a full glass of water 30 minutes to one hour before any food. In addition, the patient is advised not to lie down for at least 30 minutes after taking their medication. As a result of its complicated dosing regimen and associated side effects, the patient compliance with alendronate is currently poor.

MER-103 is an oral version of alendronate that is enhanced by the use Merrion's GIPET™ technology. This has resulted in MER-103 having a simplified dosing regimen and none of the gastrointestinal side effects found in Fosamax. Furthermore, MER-103 has an increase in bioavailability of 15-fold when taken at night or 12-fold when taken after an overnight fast. This improvement allows for less alendronate to be used in the medication. For example, it estimated that 6mg of MER-103 is equivalent to a 70 mg dose of oral alendronate's currently marketed formulation.

Chart 1.1 presents advantages of MER-103



### Conclusion

Merrion Pharmaceutical's GIPET™ technology has led to the development of an innovative new product, MER-103, for the treatment of osteoporosis. MER-103 has drug benefits including improved bioavailability, a more attractive safety profile, and a simplified dosing regimen compared to the currently marketed formulation. These factors are important in improving drug development in the osteoporosis area. Therefore, in recognition of these achievements in technology application and innovation, Frost & Sullivan is proud to present the 2008 Osteoporosis Technology Innovation of the Year Award to Merrion Pharmaceuticals.

### Award Description

The Frost & Sullivan Award for Technology Innovation of the Year is presented to the company that has demonstrated technological innovation within its industry. This Award recognizes the ability of the company to successfully develop and introduce new/disruptive technology, formulate a well-designed product family, and make significant technology contributions to the industry.

### Research Methodology

To choose the recipient of this Award, the analyst team tracks emerging and existing technologies, as well as research and development (R&D) developments. This is accomplished through interviews with major market participants and extensive secondary research. Also considered are elements such as product launches, customer acceptance, R&D expenditure, and time to market. Finally, competitors are compared and ranked for relative position. Frost & Sullivan then presents the Award to the company that received the number one industry rank.

### Measurement Criteria

In addition to the methodology described below, specific criteria are used to determine the final competitor rankings in this industry. The Award recipient has excelled based on one or more of the following criteria:

- Technology innovation contrasted against competitors
- R&D expenditures
- New product/process introduction
- Price premium
- First to market

### About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

### About Frost & Sullivan

Frost & Sullivan, the Growth Consulting Company, partners with clients to accelerate their growth. The company's Growth Partnership Services, Growth Consulting and Career Best Practices empower clients to create a growth focused culture that generates, evaluates and implements effective growth strategies. Frost & Sullivan employs over 45 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 30 offices on six continents. For more information about Frost & Sullivan's Growth Partnerships, visit <http://www.frost.com>.

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