



## **Frontier Pharma: Systemic Lupus Erythematosus - Identifying and Commercializing First-in-Class Innovation**

ResearchMoz include new market research report" **Frontier Pharma: Systemic Lupus Erythematosus - Identifying and Commercializing First-in-Class Innovation**" to its huge collection of research reports.

**View Full Report** - <http://www.researchmoz.us/frontier-pharma-systemic-lupus-erythematosus-identifying-and-commercializing-first-in-class-innovation-report.html>

### **Table of Contents**

1 Table of Contents	4
1.1 List of Tables	5
1.2 List of Figures	6
2 Introduction	7
2.1 The Case for Innovation in Systemic Lupus Erythematosus	7
2.2 Growing Opportunities for Biologic Products	7
2.3 Diversification of Molecular Targets	7
2.4 Innovative First-in-Class Product Developments Remain Attractive	8
2.5 Changes in the Clinical and Commercial Environment to be More Favorable to Products Targeting Niche Patient Populations and Indications	8
2.6 Sustained Innovation	8
3 Systemic Lupus Erythematosus	9
3.1 Disease Overview	9
3.2 Epidemiology	9
3.3 Disease Pathophysiology	10
3.4 Disease Symptoms	10
3.5 Environmental and Genetic Predisposition	11

3.6	Diagnosis	11
3.7	Disease Severity Assessments	12
3.7.1	PGA	12
3.7.2	SLEDAI	12
3.7.3	BILAG	13
3.7.4	SRI	13
3.8	Lupus Nephritis	13
3.9	Pharmacotherapy Algorithm	14
4	Clinical and Commercial Landscape	16
4.1	Corticosteroids	16
4.2	Antimalarials	16
4.3	Cytotoxic Chemotherapy	16
4.4	Biologics	17
4.4.1	Benlysta (belimumab)	17
4.5	Comparative Strengths and Weaknesses of Traditional Therapeutics	19
4.5.1	Corticosteroids vs Cytotoxic Therapeutics	19
4.5.2	Comparison of Immunosuppressants: Cyclosporine vs Azathioprine or Cyclophosphamide	21
4.5.3	Cyclophosphamide vs Azathioprine	23
4.5.4	Cyclophosphamide vs Mycophenolate Mofetil	23
4.5.5	Mycophenolate Mofetil vs Azathioprine	23
4.5.6	Biologics vs Immunosuppressants	25
4.6	Current Unmet Needs in the Systemic Lupus Erythematosus Market	27
5	Assessment of Pipeline Product Innovation	28
5.1	Overview of Pipeline Products for Systemic Lupus Erythematosus	28
5.2	Frequently Targeted Molecular Target Families	29

5.3 Comparative Distribution of Programs between the Systemic Lupus Erythematosus Market and Pipeline by Therapeutic Target Family	30
5.4 Comparative Efficacy and Safety of Pipeline Programs	31
5.5 Comparative Distribution of Programs with First-in-Class and Established Targets	33
5.6 Pipeline Programs Targeting Established Molecular Targets	35
5.7 First-in-class Pipeline Programs with Novel Molecular Targets	37
6 First-in-Class Target and Pipeline Program Evaluation	39
6.1 Cytokines and Receptors	39
6.1.1 Pipeline Programs Targeting IFN- $\alpha$	39
6.1.2 Pipeline Programs Targeting CD74	43
6.1.3 Pipeline Programs Targeting B7 Related Protein	44
6.1.4 Pipeline Programs Targeting IL-21	46
6.1.5 Pipeline Programs Targeting IL-17	49
6.1.6 Pipeline Programs Targeting High Mobility Protein Box 1	51
6.1.7 Pipeline Programs Targeting APRIL	53
6.2 B and T Cell Antigens	55
6.2.1 Pipeline Programs Targeting CD4	55
6.2.2 Pipeline Programs Targeting CD40L	57
6.2.3 Pipeline Programs which Target Fc $\gamma$ R2b (CD32b)	60
6.2.4 Pipeline Programs which Target CD19	62
6.2.5 Pipeline Programs which Target CD22	64
6.3 Intracellular Kinase	67
6.3.1 Pipeline Programs which Target Spleen Tyrosine Kinase	67
6.4 Others	70
6.4.1 Pipeline Programs which Target Immunoproteasome subunit 7 (IMP7)	70
6.4.2 Pipeline Programs which Target ILT-7	71

7 Conclusions 72

8 Deals and Strategic Consolidations 74

8.1 Licensing Agreements 74

8.2 Co-development Deals 76

8.2.1 First-in-Class Developmental Programs Not Involved in Co-development Deals or Licensing Deals 78

9 Appendix 79

9.1 References 79

9.2 Abbreviations 88

9.3 Methodology 89

9.4 Contact Us 89

9.5 Disclaimer 89

### **List of Tables**

Table 1: SLEDAI Index 12

Table 2: Classification of Lupus Nephritis 14

Table 3: Pipeline, Global, First-in-class Modulators of B7-Related Protein, Scientific Assessment 44

Table 4: Pipeline, Global, First-in-Class Modulators of IL-17, Scientific Assessment 49

Table 5: Pipeline, Global, First-in-class Modulators of APRIL, Scientific Assessment 53

Table 6: Pipeline, Global, First-in-class Modulators of CD4, Scientific Assessment 55

Table 7: Pipeline, Global, First-in-Class Modulators of FcγR2b, Scientific Assessment 60

Table 8: Pipeline, Global, First-in-Class Modulators of CD19, Scientific Assessment 62

Table 9: Pipeline, Global, First-in-Class Modulators of CD22, Scientific Assessment 65

Table 10: Pipeline, Global, First-in-Class Modulators of Immunoproteasome Subunit 7, Scientific Assessment 70

Table 11: Pipeline, Global, First-in-Class Modulators of Immunoproteasome Subunit 7, Pipeline Development 71

Table 12: Pipeline, Global, First-in-Class Modulators of Immunoglobulin-Like Transcript 7, Pipeline Development 71

### **List of Figures**

Figure 1: SLE, Treatment Algorithm 14

Figure 2: Systemic Lupus Erythematosus, Global, Marketed Products 18

Figure 3: Systemic Lupus Erythematosus, Global, Comparative Efficacy and Safety of Marketed Products 19

Figure 4: Systemic Lupus Erythematosus, Global, Marketed Products, Comparative Efficacy and Safety 20

Figure 5: Systemic Lupus Erythematosus, Global, Marketed Products, Comparative Efficacy and Safety 22

Figure 6: Systemic Lupus Erythematosus, Global, Marketed Products, Comparative Efficacy and Safety 24

Figure 7: Systemic Lupus Erythematosus, Global, Comparative Efficacy and Safety 26

Figure 8: Systemic Lupus Erythematosus, Global Pipeline Overview 28

Figure 9: Systemic Lupus Erythematosus, Global, Pipeline and Marketed Products 30

Figure 10: Systemic Lupus Erythematosus, Global, Comparative Efficacy and Safety of Pipeline Programs Relative to Benlysta (belimumab) 32

Figure 11: Systemic Lupus Erythematosus, Global, Pipeline, First-in-class Products 34

Figure 12: Systemic Lupus Erythematosus, Global, Pipeline, Programs with Established Molecule Targets 36

Figure 13: Systemic Lupus Erythematosus, Global, Pipeline, First-in-class Programs 38

Figure 14: Pipeline, Global, First-in-Class IFN- $\alpha$  Inhibitors, Scientific assessment 41

Figure 15: Pipeline, Global, First-in-Class IFN- $\alpha$  Inhibitors, Pipeline Development 42

Figure 16: Pipeline, Global, First-in-Class CD74 Inhibitors, Pipeline Development 43

Figure 17: Pipeline, Global, First-in-Class Modulators of B7-Related Protein, Pipeline Development 45

Figure 18: Pipeline, Global, First-in-class modulators of IL-21, Scientific Assessment 47

Figure 19: Pipeline, Global, First-in-class Modulators of IL-21, Pipeline Development 48

Figure 20: Pipeline, Global, First-in-Class Modulators of IL-17 , Pipeline Development 50

Figure 21: Pipeline, Global, First-in-Class High Mobility Box Protein 1 Inhibitors, Pipeline Development 52

Figure 22: Pipeline, Global, First-in-class Modulators of APRIL, Pipeline Development 54

Figure 23: Pipeline, Global, First-in-class Modulators of CD4, Pipeline Development 56

Figure 24: Pipeline, Global, First-in-Class Modulators of CD40L, Scientific Assessment 58

Figure 25: Pipeline, Global, First-in-Class Modulators of CD40L, Pipeline Development 59

Figure 26: Pipeline, Global, First-in-Class Modulators of FcγR2b, Pipeline Development 61

Figure 27: Pipeline, Global, First-in-Class Modulators of CD19, Pipeline Development 63

Figure 28: Pipeline, Global, First-in-Class Modulators of CD22, Pipeline Development 66

Figure 29: Pipeline, Global, First-in-Class Modulators of Spleen Tyrosine Kinase, Scientific Assessment 68

Figure 30: Pipeline, Global, First-in-Class modulators of Spleen Tyrosine Kinase, Pipeline Development 69

Figure 31: Systemic Lupus Erythematosus, Global, Licensing Agreements, 2006–2013 (October) 75

Figure 32: Systemic Lupus Erythematosus, Global, Co-development deals, 2006–2013 (October) 77

Figure 33: Systemic Lupus Erythematosus, Global, First in-Class Programs Not Involved in Co-development or Licensing Deals 78

**View Full Report** - <http://www.researchmoz.us/frontier-pharma-systemic-lupus-erythematosus-identifying-and-commercializing-first-in-class-innovation-report.html>

#### **About ResearchMoz**

ResearchMoz is the one stop online destination to find and buy market research reports & Industry Analysis. We fulfill all your research needs spanning across industry verticals with our huge collection of market research reports. We provide our services to all sizes of organizations and across all industry verticals and markets. Our Research Coordinators have in-depth knowledge of reports as well as publishers and will assist you in making an informed decision by giving you unbiased and deep insights on which reports will satisfy your needs at the best price.

#### **For More Information Kindly Contact:**

**Website@** <http://www.researchmoz.us/>

**Email:** [sales@researchmoz.us](mailto:sales@researchmoz.us)

**Browse Blog** - <http://latestmarketstudy.blogspot.com/>

**Browse Blog** - <http://pramoddige91.wordpress.com/>