

Prospectus Supplement No. 5
Dated June 28, 2004
To Prospectus Dated July 23, 2003

Rigel Pharmaceuticals, Inc.
9,583,331 Shares
Common Stock

This prospectus supplement supplements the prospectus, dated July 23, 2003, of Rigel Pharmaceuticals, Inc. relating to the offering and sale by selling stockholders of Rigel (or by donees, pledgees, transferees and other successors in interest that receive such shares as a gift, pledge, partnership distribution or other non-sale transfer) of 9,583,331 shares of our common stock. This prospectus supplement should be read in conjunction with the prospectus, and is qualified by reference to the prospectus, except to the extent that the information presented herein supercedes the information contained in the prospectus. The term "Selling Stockholders" as used in the prospectus shall be deemed to include the selling stockholders identified in the table below. This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the prospectus, including any amendments or supplements thereto.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page 1 of the prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus supplement is being filed in connection with the distribution of shares held by MPM BioVentures III-QP, L.P. identified in the prospectus as a selling stockholder, to its partners. No additional shares of Rigel common stock are being offered for resale hereunder. The table appearing on pages 16 and 17 of the prospectus under the caption "Selling Stockholders" is supplemented and amended to include the following stockholders in addition to those identified in the prospectus:

Name and Address of Beneficial Owner***	Beneficial Ownership Before Offering		Shares Offered	Beneficial Ownership After Offering	
	Shares	Percent*		Shares	Percent*
MPM BioVentures III-QP, L.P.(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	2,248,911(2)	11.9%	2,248,911	0	**
A. Segal Holdings	3,280	**	3,280	0	**
Abbott Laboratories	32,796	**	32,796	0	**
Alexandria Equities, LLC	8,035	**	8,035	0	**
Allianz Leben Private Equity Fonds 2001 GmbH	32,796	**	32,796	0	**
Allianz Private Equity Partners GmbH	8,199	**	8,199	0	**
American Family Mutual Insurance Company	16,398	**	16,398	0	**
Anatolia College	410	**	410	0	**

Ann Arbor Partners, L.P.	820	**	820	0	**
Anthem Insurance Companies	8,199	**	8,199	0	**
Autumn Ventures LLC	3,280	**	3,280	0	**
Bank of America Capital Corporation	32,796	**	32,796	0	**
Banque de Luxembourg	16,398	**	16,398	0	**
BB TRUST under authorized date 2/21/03	1,640	**	1,640	0	**
Bechtle Revocable Trust Dated October 18, 1991	2,050	**	2,050	0	**
Biogen Idec MA, Inc.	6,559	**	6,559	0	**
BSC Venture Fund 2001 LLC	8,199	**	8,199	0	**
Surfboard & Co. (California Emerging Ventures II, LLC)	81,990	**	81,990	0	**
Canada Pension Plan Investment Board	122,986	**	122,986	0	**
Case Western Reserve University	4,919	**	4,919	0	**
CDK Associates, L.L.C.	8,199	**	8,199	0	**
China Development Industrial Bank Inc.	8,199	**	8,199	0	**
Commerce and Industry Insurance Company	8,199	**	8,199	0	**
Danske Private Equity Partners II (USD) K/S	40,995	**	40,995	0	**
Danske Private Equity Partners K/S	57,393	**	57,393	0	**
Erickson, Thomas J.	615	**	615	0	**
Evnin, Anthony B.	1,640	**	1,640	0	**
Ewing Marion Kauffman Foundation	9,839	**	9,839	0	**
Fiduciary Trust Co., Trustee u/a 4/23/93	8,199	**	8,199	0	**
Fiduciary Trust Company, Trustee u/a 10/9/91	8,199	**	8,199	0	**
Forbes Jr., John G.	246	**	246	0	**
General Electric Capital Corporation	8,199	**	8,199	0	**
Genzyme Corporation	8,199	**	8,199	0	**
Gollamudi, Raj L.	328	**	328	0	**
GS PEP 1999 Manager Fund Technology Holdings, LLC	927	**	927	0	**
GS PEP Technology Fund 2000 Offshore Holdings, L.P.	12,718	**	12,718	0	**
GS PEP Technology Fund 2000, L.P.	32,227	**	32,227	0	**
GS Private Equity Partners 2000—Manager Fund L.P.	8,937	**	8,937	0	**

GS Private Equity Partners 2000 Offshore Holdings, LP	8,101	**	8,101	0	**
GS Private Equity Partners 2000, LP	23,958	**	23,958	0	**
GS Private Equity Partners 2002—Manager Fund, LP	8,527	**	8,527	0	**
GS Private Equity Partners 2002 Employee Fund, LP	2,279	**	2,279	0	**
GS Private Equity Partners 2002 Offshore Holdings, LP	19,497	**	19,497	0	**
GS Private Equity Partners 2002, LP	4,870	**	4,870	0	**
HFI Private Equity Ltd.	16,398	**	16,398	0	**
Hunter Portsmouth, LLC	1,640	**	1,640	0	**
Jax Partners	3,936	**	3,936	0	**
Knightsbridge Integrated Holdings V, LP	24,597	**	24,597	0	**
Kowloon Ltd.	4,919	**	4,919	0	**
Langton Ltd.	8,199	**	8,199	0	**
Legacy I, LLC	8,199	**	8,199	0	**
Legacy Venture II, LLC	8,199	**	8,199	0	**
Maraganore, John	328	**	328	0	**
Merck & Co., Inc.	32,796	**	32,796	0	**
Next Chapter Holdings, LP	820	**	820	0	**
Nippon Life Insurance Company	32,796	**	32,796	0	**
Old Westbury Private Equity Fund 2001, LLC (Series A)	6,272	**	6,272	0	**
Old Westbury Private Equity Fund 2001, LLC (Series B)	1,927	**	1,927	0	**
Oscar L. Tang Grantor Trust	328	**	328	0	**
Overbrook Limited Partnership	8,199	**	8,199	0	**
Peter E. and Miriam L. Haas, CPWROS	3,280	**	3,280	0	**
Phillip W. Moffitt Revocable Trust	820	**	820	0	**
Prince Holdings, Inc.	2,460	**	2,460	0	**
Rinconada LLC	1,640	**	1,640	0	**
Rose Nominees Limited a/c 29977	6,559	**	6,559	0	**
Scottish Widows Investment Partnership Limited	24,597	**	24,597	0	**
Selby, Norman C.	820	**	820	0	**

Silver Aggressive Growth Fund, LP	11,479	**	11,479	0	**
Singer, David B.	164	**	164	0	**
SRB Ruby Trust	8,199	**	8,199	0	**
State—Boston Retirement System	16,398	**	16,398	0	**
Rivercoast & Co. (State Treasurer of the State of Michigan, Custodian of the Michigan Public School Employees' Retirement System and Michigan State Police Retirement System)	40,995	**	40,995	0	**
Stone Street PEP Technology Fund 2000, L.P.	11,521	**	11,521	0	**
Sun America Investments Inc.	24,597	**	24,597	0	**
SVB Strategic Investors, LLC	12,299	**	12,299	0	**
Tang Family Trust BTCL Article V Oscar Trust	6,231	**	6,231	0	**
Tang, Oscar L.	656	**	656	0	**
Teachers Insurance and Annuity Association of America	65,592	**	65,592	0	**
Tepper, Robert I.	410	**	410	0	**
The Bank of New York as Trustee for the Non-Union Life VEBA Master Trust of KeySpan Corporation	1,230	**	1,230	0	**
The Bank of New York as Trustee for the Union VEBA Master Trust of KeySpan Corporation	4,100	**	4,100	0	**
The Bank of New York for the Pension Master Trust of KeySpan Corporation	27,467	**	27,467	0	**
The Paul B. Kopperl 1997 Trust	1,640	**	1,640	0	**
The Plum Coulee Partnership	8,199	**	8,199	0	**
The St. James Trust Company Ltd.	9,019	**	9,019	0	**
The Tang Fund	984	**	984	0	**
Trust dated 12/19/1966 f/b/o Shirley S. Katzenbach #1	4,919	**	4,919	0	**
Trust U/Article Third of L/W/T of Shirley W. Steinman	4,919	**	4,919	0	**
Valinco Investments Limited	1,640	**	1,640	0	**
Vander Vort, John W.	492	**	492	0	**
W.M. Keck Foundation	40,995	**	40,995	0	**
Wachovia Investors, Inc.	8,199	**	8,199	0	**
Walton Investment V, LLC	4,919	**	4,919	0	**

Winkey, Travis J.	205	**	205	0	**
Winterthur Life Kollektiv (Winterthur Life Insurance Co.)	21,121	**	21,121	0	**
Winterthur Life Einzel (Winterthur Life Insurance Co.)	11,675	**	11,675	0	**
Wyeth	16,398	**	16,398	0	**
Total	3,497,542		3,497,542		

* Percentage calculations based on 18,218,103 shares of our common stock that were issued and outstanding as of June 28, 2004.

** Less than 1%

*** Addresses that are not listed are c/o MPM Capital, 601 Gateway Blvd., Suite 350, South San Francisco, CA 94080.

(1) Dr. Henner and Mr. Simon, directors of Rigel since June 26, 2003, are managing members of MPM BioVentures III LLC and MPM Asset Management Investors 2003 BVIII, LLC. MPM BioVentures III LLC is the general partner of MPM BioVentures III GP, L.P., which is the general partner of MPM BioVentures III, L.P., MPM BioVentures III-QP, L.P. and MPM BioVentures III Parallel Fund, L.P. and the Managing Limited Partner of MPM BioVentures III GmbH & Co. Beteiligungs KG. In addition to the entity set forth in the table above, MPM Asset Management Investors 2003 BVIII LLC is the beneficial owner of 29,560 shares and currently exercisable warrants to purchase 13,990 shares of common stock, MPM BioVentures III, L.P. is the beneficial owner of 102,623 shares and currently exercisable warrants to purchase 48,585 shares of common stock, MPM BioVentures III Parallel Fund, L.P. is the beneficial owner of 46,097 shares and currently exercisable warrants to purchase 21,823 shares of common stock and MPM BioVentures III GmbH & Co. Beteiligungs KG is the beneficial owner of 128,995 shares and currently exercisable warrants to purchase 61,068 shares of common stock. Each of Mr. Simon and Dr. Henner disclaims beneficial ownership of all such shares except to the extent of their respective proportionate pecuniary interests therein.

(2) Includes 722,589 shares of common stock subject to a currently exercisable warrant.

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