UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

AVI BIOPHARMA, INC.

(Exact name of registrant as specified in its charter)

Oregon

(State or other jurisdiction of incorporation or organization)

93-0797222 (I.R.S. Employer Identification No.)

One S.W. Columbia St., Suite 1105 Portland, OR 97258 (503) 227-0554

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Alan P. Timmins

President and Chief Operating Officer AVI BioPharma, Inc.

One S.W. Columbia, Suite 1105, Portland, OR 97258

(503) 227-0554

(Name, address, including zip code, and telephone number, including area code, of agent for service)

> Copies to: Trinh C. Tran, Esq. Davis Wright Tremaine LLP 23rd Floor 1300 S.W. Fifth Avenue Portland, Oregon 97201 (503)241-2300

Approximate date of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is filed as a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. o

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. o

Title of Class of Securities to be Registered(1)	Agg	Proposed Maximum regate Offering Price	Amount of stration Fee(2)
Common Stock, par value \$.0001 per share			—
Preferred Stock, par value \$.0001 per share			_
Warrants		_	_
Total	\$	75,000,000	\$ 8,025

(1) Includes such indeterminate number of shares of common stock and preferred stock and such indeterminate number of warrants to purchase common stock or preferred stock as shall have an aggregate initial offering price not to exceed \$75,000,000. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The securities registered also include such indeterminate amounts and numbers of common stock or preferred as may be issued upon conversion of or exchange for preferred stock that provides for conversion or exchange, upon exercise of warrants or pursuant to the antidiluition provisions of any such securities

(2) Fee calculated pursuant to Rule 457(o) and Section 6(b) of the Securities Act of 1933.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted

SUBJECT TO COMPLETION, DATED OCTOBER , 2006

\$75,000,000 AVI BIOPHARMA, INC. Common Stock Preferred Stock Warrants

We may offer and sell from time to time in one or more offerings shares of common stock, preferred stock and warrants of AVI BioPharma, Inc., up to a total public offering price of \$75,000,000.

Our common stock is quoted on the Nasdaq National Market under the symbol "AVII." The closing sales price of our common stock on the Nasdaq National Market on October 27, 2006 was \$4.14 per share.

Each time we sell shares of common stock or preferred stock, or warrants to acquire common or preferred stock, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described under the heading "Information Incorporated by Reference" before you make your investment decision.

We will sell the securities to underwriters or dealers, through agents, or directly to investors, or a combination of these methods. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution."

Investing in our securities stock involves a high degree of risk. See "Risk Factors" beginning on page 6 of this prospectus, as well as in supplements to this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2006.

2

TABLE OF CONTENTS Prospectus

PROSPECTUS

AVI DioPharma logo, NEUGENE®, Resten-NG® and AVICINE® are registered trademarks of AVI. Resten-MP[™] and Oncomyc-NGTM are trademarks of AVI. All other trademarks, service marks or trade names referred to in this prospectus are the property of their respective owners.

3

ABOUT THIS PROSPECTUS

This prospectus is part of a "shelf" registration statement that we have filed with the Securities and Exchange Commission, which we refer to as the "SEC". By using a shelf registration statement, we may issue and sell to the public any part or all of the securities described in the registration statement, at any time and from time to time, in one or more public offerings, up to an aggregate amount of \$75,000,000. The exhibits to our registration statement contain the text of certain contracts and other important documents we have summarized in this prospectus, in any prospectus supplement or in the documents incorporated by reference in this prospectus. Since these summaries may not contain all the information that you may find important in deciding whether to purchase the securities we offer, you should review the full text of these documents. The registration statement, the exhibits and the documents incorporated by reference can be obtained from the SEC as indicated under the heading "Where You Can Find More Information."

This prospectus only provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that contains specific information about the terms of those securities. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described below under the heading "Where You Can Find More Information," and "Information Incorporated by Reference."

We may sell the securities to or through underwriters, dealers, or agents or directly to purchasers. We and our agents reserve the sole right to accept and to reject in whole or in part any proposed purchase of securities. See "Plan of Distribution" below. A prospectus supplement, which we will provide to you each time we offer securities, will provide the names of any underwriters, dealers, or agents involved in the sale of the securities, and any applicable fee, commission, or discount arrangements with them.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any jurisdiction where the offer is not permitted. You should not assume that the information in this prospectus or a prospectus supplement is accurate as of any date other than the date on the front of the document.

References in this prospectus to "AVI", the "Company", we", "us" and "our" are to AVI BioPharma, Inc., an Oregon corporation.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public from the SEC's web site at http://www.sec.gov. You may also read and copy any document we file at the SEC's public reference room in Washington, D.C. located at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of any document we file at prescribed rates by writing to the Public Reference Section of the Securities Exchange Commission at that address. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Information about us, including our SEC filings, is also available on our website at http://www.avibio.com; however, that information is not a part of this prospectus or any accompanying prospectus supplement.

4

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" in this prospectus the information in other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information in documents that we file later with the SEC will automatically update and supersede information contained in documents filed earlier with the SEC or contained in this prospectus or a prospectus supplement. We incorporate by reference in this prospectus the documents listed below and any future filings that we may make with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934, as amended, prior to the termination of the offering under this prospectus:

- · Annual Report on Form 10-K for the year ended December 31, 2005;
- Quarterly Report on Form 10-Q for the quarter ended June 30, 2006;
- · Current Reports on Form 8-K filed on February 1, 2006, February 17, 2006, March 9, 2006, March 28, 2006, May 8, 2006, May 30, 2006; and
- The description of our common stock contained in our registration statement on Form 8-A filed on May 29, 1997.

Notwithstanding the foregoing, we are not incorporating any document or information deemed to have been furnished and not filed in accordance with SEC rules. You may obtain a copy of any or all of the documents referred to above which may have been or may be incorporated by reference into this prospectus (excluding certain exhibits to the documents) at no cost to you by writing or telephoning us at the following address:

AVI BioPharma, Inc. Investor Relations One S.W. Columbia Suite 1105 Portland, OR 97258 Attn: Michael C. Hubbard (503) 227-0554

The mailing address of our principal executive offices is AVI BioPharma, Inc., One S.W. Columbia Suite 1105 Portland, OR 97258, and our telephone number at that location is (503) 227-0554.

5

RISK FACTORS

Investment in our securities involves a high degree of risk. You should carefully consider the risks described in the section entitled "Risk Factors" in any prospectus supplement as well as in the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in our most recent annual report on Form 10-K and in our most recent quarterly report on Form 10-Q, both of which have been filed with the SEC and are incorporated herein by reference in their entirety, as well as other information in this prospectus, any accompanying prospectus supplement, and any other documents or reports incorporated by reference herein before purchasing any of our securities. Each of the risks described in these sections and documents could materially and adversely affect our business, financial condition, results of operations and prospects, and could result in a loss of your investment.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus and the information incorporated by reference herein and therein contain forward-looking statements regarding our plans, expectations, estimates and beliefs. Such statements are "forward-looking statements" for purposes of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. Our actual results could differ materially from those discussed in, or implied by, these forward-looking statements. Forward-looking statements are identified by words such as "believe," "anticipate," "expect," "intend," "plan," "will," "may," and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. These forward-looking statements are based on current expectations and are not guarantees of future performance. We caution you not to place undue reliance on these statements, which speak only as of the date on which the statement was made. Forward-looking statements in this prospectus supplement and the accompanying prospectus include, but are not necessarily limited to, those relating to:

- · our plans for future clinical developments;
- receipt of any required FDA or other regulatory approval for our products;
- · our expectations about the markets for our products;
- · acceptance of our products, when introduced, in the marketplace;
- · our future capital needs; and
- · success of our patent applications.

Forward-looking statements are subject to risks and uncertainties, certain of which are beyond our control. Actual results could differ materially from those anticipated as a result of the factors described in "Risk Factors" in the accompanying prospectus and detailed in our other SEC filings, including among others:

- the effect of regulation by the FDA and other governmental agencies;
- · delays in obtaining, or our inability to obtain, approval by the FDA or other regulatory authorities for our products;
- · research and development efforts, including delays in developing, or the failure to develop, our products;
- the development of competing or more effective products by other parties;
- the results of pre-clinical and clinical testing;
- · uncertainty of market acceptance of our products;
- · problems that we may face in manufacturing, marketing, and distributing our products;
- our inability to raise additional capital when needed;
- · delays in the issuance of, or the failure to obtain, patents or licenses for our products and technologies; and
- · problems with important suppliers and business partners.

6

Because of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus and any subsequent prospectus supplement or incorporated by reference might not transpire. Except for our ongoing obligations to disclose material information as required by the federal securities laws, we undertake no obligation to release publicly any revisions to any forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. All of the above factors are difficult to predict, contain uncertainties that may materially affect our actual results and may be beyond our control. New factors emerge from time to time, and it is not possible for our management to predict all of such factors or to assess the effect of each factor on our business.

USE OF PROCEEDS

Except as described in any prospectus supplement, we currently intend to use the net proceeds from the sale of our securities for research and development and general corporate purposes. We may also use a portion of the net proceeds to commercialize our products, or to acquire or invest in businesses, products and technologies that are complementary to our own or provide us with a strategic advantage. We may also issue the securities offered under this prospectus in connection with product license and supply agreements, research collaboration agreements and to our commercial vendors and suppliers in exchange for products and services. Until we use the net proceeds of this offering for the above purposes, we intend to invest the funds in short-term, investment grade, interest-bearing securities. We cannot predict whether the proceeds invested will yield a favorable return.

PLAN OF DISTRIBUTION

We may sell the offered securities (a) through agents; (b) through underwriters or dealers; (c) directly to one or more purchasers; or (d) through a combination of any of these methods of sale. We may distribute the securities from time to time in one or more these transactions (a) at a fixed price or prices, which may be changed, (b) at market prices prevailing at the time of sale, (c) at prices related to the prevailing market prices or (d) at negotiated prices. We may engage in at the market offerings of our common stock. An "at the market" offering is an offering of our common stock at other than a fixed price to or through a market maker. We may also determine the price or other terms of the securities offered under this prospectus by use of an electronic auction.

The prospectus supplement with respect to the securities being offered will set forth the terms of the offering, including the names of the underwriters, dealers or agents, if any, the method of distribution, the purchase price of the securities, the net proceeds to us, any underwriting discounts and other items constituting underwriters' compensation, any discounts or concessions allowed or reallowed or paid to dealers and any securities exchanges on which the securities may be listed. Also, if applicable, we will describe in the prospectus supplement how any auction will determine the price or any other terms, how potential investors may participate in the auction and the nature of the underwriters' obligations with respect to the auction.

If underwriters are used in an offering of the securities, we will execute an underwriting agreement with the underwriters and will specify the name of each underwriter and the terms of the transaction (including any underwriting discounts and other terms constituting compensation of the underwriters and any dealers) in a prospectus supplement. If an underwriting syndicate is used, the managing underwriter(s) will be specified on the cover of the prospectus supplement. If underwriters are used in the sale, the offered securities will be acquired by the underwriters for their own accounts and may be resold from time to time in one or more transactions described above, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. Any public offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time. Unless otherwise set forth in the prospectus supplement, the obligations of the underwriters to purchase the offered securities will be subject to conditions precedent, and the underwriters will be obligated to purchase all of the offered securities if any are purchased. We may grant underwriters who participate in the distribution of the securities an option to purchase additional securities to cover over-allotments, if any, in connection with the distribution.

7

If dealers are used in an offering of the securities, we will sell the securities to the dealers as principals. The dealers then may resell the securities to the public at varying prices which they determine at the time of resale. The names of the dealers and the terms of the transaction will be specified in a prospectus supplement.

The securities may be sold directly by us or through agents we designate. If agents are used in an offering, the names of the agents and the terms of the agency will be specified in a prospectus supplement. Unless otherwise indicated in a prospectus supplement, the agents will act on a best-efforts basis for the period of their appointment.

Dealers and agents named in a prospectus supplement may be deemed to be underwriters (within the meaning of the Securities Act of 1933) of the securities described therein. In addition, we may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act of 1933 with respect to any resales thereof.

Underwriters, dealers and agents may be entitled to indemnification by us against specific civil liabilities, including liabilities under the Securities Act of 1933, or to contribution with respect to payments that the underwriters or agents may be required to make. The terms of any indemnification agreement will be set forth in a prospectus supplement. Underwriters, dealers or agents and their associates who may become involved in the sale of the securities may engage in transactions with, and perform services for us in the ordinary course of business. In addition, we may use underwriters with whom we have a material relationship. We will describe the nature of any such relationship in the applicable prospectus supplement, naming the underwriter.

Any underwriter may engage in over-allotment transactions, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. We make no representation or prediction as to the direction or magnitude of any effect that such transactions may have on the price of the securities. For a description of these activities, see the information under the heading "Underwriting" in the applicable prospectus supplement.

Any common stock sold pursuant to a prospectus supplement will be eligible for listing and trading on the Nasdaq National Market, subject to official notice of issuance. Any underwriters to whom securities are sold by us for public offering and sale may make a market in the securities, but the underwriters will not be obligated to do so and may discontinue any market making at any time without notice.

LEGAL MATTERS

Unless otherwise specified in the prospectus supplement accompanying this prospectus, Davis Wright Tremaine LLP, 1300 S.W. Fifth Avenue, 23rd Floor, Portland, Oregon 97201, will provide opinions regarding the authorization and validity of the securities. Any underwriters will also be advised about legal matters by their own counsel, which will be named in the prospectus supplement.

EXPERTS

The financial statements of AVI BioPharma, Inc. as of December 31, 2005 and 2004, and for each of the years in the three-year period ended December 31, 2005, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005 have been incorporated by reference herein and in the registration statement in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

9

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other expenses of issuance and distribution.

The following table sets forth the fees and expenses, other than underwriting compensation, payable in connection with the registration of common stock, preferred stock, and warrants hereunder. All amounts are estimates except for the SEC registration fee. The assumed amount has been used to demonstrate the expenses of an offering and does not represent an estimate of the amount of securities that may be registered or distributed because such amount is unknown at this time.

SEC registration fee	\$ 8,025
Printing and engraving fees	25,000
Legal expenses	150,000
Accounting fees and expenses	100,000
NASD, Nasdaq and blue sky expenses	25,000
Miscellaneous	191,975
Total	\$ 500,000

Item 15. Indemnification of directors and officers.

Our Amended and Restated Articles of Incorporation provide for indemnification by us or our directors and former directors, and for advancement of reasonable expenses incurred by each such person upon an undertaking by such person to repay such amount if it is ultimately determined that he or she is not entitled to indemnification. Our Bylaws also provide that we shall have the power to indemnify our directors and officers pursuant to applicable law. Such indemnification does not cover matters involving (i) the breach of a director's duty of loyalty, (ii) actions or omissions not in good faith, intentional misconduct or knowing violations of law, (iii) the unlawful payment of dividends, stock purchases or redemptions or (iv) any transaction from which a director derives an improper personal benefit.

We have entered into indemnification agreements with each of our directors. These agreements, among other things, indemnify our directors and officers for certain expenses (including attorneys' fees), judgments, fines and settlement amounts incurred by any such director or officer in any action or proceeding, including any action by or in our right, arising out of such person's services as one of our directors or officers, to any of our subsidiaries or to any other company or enterprise to which the director or officer provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and officers.

10

Item 16. Exhibits

		Incorporated by Reference to Filings Indicated				
Exhibit Number	Exhibit Description	Form	File No.	Exhibit	Filing Date	Filed Herewith
1.1	Form of Underwriting Agreement*					
4.1	Third Amended and Restated Articles of	SB-2	333-20513	3.1	5/29/97	
	Incorporation.					
4.2	First Amendment to Third Restated Articles of	8-K	0-22613	3.3	9/30/98	
	Incorporation of AntiVirals, Inc.					
4.3	Amendment to Article 2 of Company's Third	DEF14A	1-14895	N/A	4/11/02	
	Amended and Restated Articles of Incorporation					
4.4	Amended and Restated Bylaws.	SB-2	333-20513	3.2	5/29/97	
5.1	Opinion of Davis Wright Tremaine LLP					Х
23.1	Consent of KPMG LLP, Independent Registered					Х
	Public Accounting Firm.					
23.2	Consent of Davis Wright Tremaine LLP (contained					Х
	in Exhibit 5.1).					
24.1	Power of Attorney (contained on pages II-5 and II-					Х
	6).					

^{*} To be filed as an exhibit to a Current Report on Form 8-K and incorporated by reference or by post-effective amendment.

Item 17. Undertakings.

(a) The undersigned Registrant hereby undertakes:

(1) to file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement: (i) to include any prospectus required by Section 10(a)(3) of the Securities Act; (ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and (iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement; *provided, however*, that paragraphs (i), (ii) and (iii) do not apply if the Registration Statement is on Form S-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the Registration Statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the Registration Statement;

(2) that, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof;

(3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering;

(4) that, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(A) Each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the Registration Statement as of the date the filed prospectus was deemed part of and included in the Registration Statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the Registration Statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the Registration Statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a Registration Statement or prospectus that is part of the Registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was

12

made in the Registration Statement or prospectus that was part of the Registration Statement or made in any such document immediately prior to such effective date; and

(5) that, for the purpose of determining liability of the Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this Registration Statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(A) Any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(B) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(C) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(D) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described under Item 15 above, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

13

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Portland, Oregon on October 30, 2006.

By:

AVI BIOPHARMA, INC.

/s/ DENIS R. BURGER, PH.D. Denis R. Burger, Ph.D. Chief Executive Officer and Chairman of the Board

14

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Denis R. Burger, Alan P. Timmins and Mark M. Webber, and each of them, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for the undersigned and in his or her name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments and registration statements filed pursuant to Rule 462(b) under the Securities Act) to the Registration Statement and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

SIGNATURE TITLE DATE /s/ DENIS R. BURGER, PH.D. Chairman of the Board and Chief October 30, 2006 Executive Officer(Principal Executive Officer) Denis R. Burger, Ph.D. /s/ ALAN P. TIMMINS President, Chief Operating Officer, and Director October 30, 2006 Alan P. Timmins /s/ MARK M. WEBBER Chief Financial Officer and Chief Information October 30, 2006 Mark M. Webber Officer(Principal Financial and Accounting Officer) /s/ MICHAEL D. CASEY Director October 30, 2006 Michael D. Casey /s/ JOHN W. FARA, PH.D. Director October 30, 2006 John W. Fara, Ph.D. October 30, 2006 /s/ JAMES B. HICKS, PH.D. Director James B. Hicks, Ph.D. October 30, 2006 /s/ JACK L. BOWMAN Director Jack L. Bowman /s/ K. MICHAEL FORREST Director October 30, 2006 K. Michael Forrest /s/ JOHN C. HODGMAN Director October 30, 2006

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

		Incorporated by Reference to Filings Indicated					
Exhibit Number	Exhibit Description	Form	File No.	Exhibit	Filing Date	Filed Herewith	
1.1	Form of Underwriting Agreement*						
4.1	Third Amended and Restated Articles of Incorporation.	SB-2	333-20513	3.1	5/29/97		
4.2	First Amendment to Third Restated Articles of Incorporation of AntiVirals, Inc.	8-K	0-22613	3.3	9/30/98		
4.3	Amendment to Article 2 of Company's Third Amended and Restated Articles of Incorporation	DEF14A	1-14895	N/A	4/11/02		
4.4	Amended and Restated Bylaws.	SB-2	333-20513	3.2	5/29/97		
5.1	Opinion of Davis Wright Tremaine LLP					Х	
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.					Х	
23.2	Consent of Davis Wright Tremaine LLP (contained in Exhibit 5.1).					Х	
24.1	Power of Attorney (contained on pages II-5 and II- 6).					Х	

INDEX TO EXHIBITS

* To be filed as an exhibit to a Current Report on Form 8-K and incorporated by reference or by post-effective amendment.

AVI BioPharma, Inc. One S.W. Columbia Street, Suite 1105 Portland, Oregon 97258

Dear Ladies and Gentlemen:

We have acted as counsel to AVI BioPharma, Inc. (the "Company") in connection with the registration statement on Form S-3 to be filed by the Company with the Securities and Exchange Commission on October 30, 2006 (the "Registration Statement"), relating to the registration under the Securities Act of 1933, as amended, of an as-yet undetermined number of shares of common stock and preferred stock and warrants to purchase common stock and preferred stock with an aggregate of initial offering price not to exceed \$75,000,000. The securities offered and sold by the Company pursuant to the Registration Statement may be all or any combination of (1) shares of common stock, par value \$0.0001 per share, of the Company (the "Common Shares"), (2) shares of preferred stock, par value \$0.0001 per share, in any class or series, of the Company (the "Preferred Shares") and (3) warrants to acquire Common Shares and/or Preferred Shares (the "Warrants"). The Common Shares, Preferred Shares, and Warrants are collectively referred to herein as the "Securities."

We have examined such documents, papers, statutes and authorities as we have deemed necessary to form a basis for the opinions expressed herein. This opinion letter is to be interpreted in accordance with the Guidelines for the Preparation of Closing Opinions issued by the Committee on Legal Opinions of the American Bar Association's Business Law Section as published in 57 Business Lawyer 875 (February 2002).

The Common Shares and/or Preferred Shares may be offered in any class or series and to the extent required will be issued pursuant to amendments to the Company's Articles of Incorporation, as amended, restated or supplemented, filed with the Secretary of State of the State of Oregon ("OSOS").

In connection therewith, we have relied upon, among other things, our examination of such documents, records of the Company and certificates of its officers and public officials as we have deemed necessary for purposes of the opinions expressed below. In our examination of the foregoing, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the accuracy and completeness of all documents submitted to us, the authenticity of all original documents, and the conformity to authentic original documents of all documents submitted to us as copies. We have further assumed that, at and prior to the time of the sale and delivery of any Securities pursuant to the Registration Statement, (a) the Board of Directors of

the Company (or the committee of the Board or the officer authorized to act on behalf of the Company) will have duly established the rights, powers, privileges and preferences and other terms, if any, of any class or series, as applicable, of the Common Shares, the Preferred Shares, or the Warrants (b) the resolutions adopted by the Board relating to the issuance of the Securities prior to the date hereof have not have been amended, modified or rescinded in any way that is relevant to the matters addressed in this opinion, (c) the Registration Statement has been declared effective and no stop order suspending the effectiveness of the Registration Statement has been issued and no proceedings with respect thereto have been commenced or threatened, and (d) there has not occurred any change in law adversely affecting the power of the Company to offer and sell the Securities or the validity of the Securities.

We have also assumed that the terms of any Common Shares, Preferred Shares or Warrants to be established subsequent to the date hereof, the offering, sale and delivery of any such Securities, and compliance by the Company with the rights, powers, privileges and preferences and other terms, if any, of such Common Shares, Preferred Shares or Warrants will not at the time of such offering, sale and delivery violate or conflict with (a) the Articles of Incorporation, as then amended, restated and supplemented, and Bylaws, as then amended, restated and supplemented, of the Company, (b) any provision of any license, indenture, instrument, mortgage, contract, document or agreement to which the Company is then a party or by which the Company is then bound, or (c) any law or regulation or any decree, judgment or order then applicable to the Company. We have further assumed that the number of Common Shares, Preferred Shares or Warrants to be offered and sold pursuant to the Registration Statement will not at the time of such offering and sale exceed the amount of such class of shares authorized in the Articles of Incorporation, as then amended, restated or supplemented, and unissued (and not otherwise reserved for issuance) at such time. We have also assumed that prior to the offering and sale in the case of Preferred Shares, Certificates of Designation will have been filed with, and accepted for record by, OSOS. Notwithstanding anything herein to the contrary, we have also assumed that in no event will the combined aggregate purchase prices for the Securities to be offered pursuant to the Registration Statement exceed the registered amount of \$75,000,000.

Based upon the foregoing, and having regard for such legal considerations as we have deemed relevant, we are of the opinion that:

1. The Company is a corporation duly formed, validly existing and in good standing under the laws of the State of Oregon.

2. When (a) the terms of any class or series of the Common Shares, Preferred Shares, or Warrants, as applicable, have been authorized by appropriate action of the Company, and (b) the Common Shares, Preferred Shares, or Warrants as applicable, have been issued and sold upon the terms and conditions set forth in the Registration Statement, the prospectus, the applicable prospectus supplement and any free-writing prospectus, then such Common Shares, Preferred Shares, or Warrants as applicable.

The foregoing opinion is limited to the corporate law of the State of Oregon, and we do not express any opinion herein concerning any other law. We express no opinion as to the applicability or effect of any federal or state securities laws, including the securities laws of the State of Oregon, or as to federal or state laws regarding fraudulent transfers. To the extent that any matter as to which our opinion is expressed herein would be governed by any law other than the corporate law of the State of Oregon, we do not express any opinion on such matter.

This opinion letter is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. This letter speaks only as of the date hereof and is limited to present statutes, regulations and administrative and judicial interpretations. We undertake no responsibility to update or supplement this letter after the date hereof.

We consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the heading "Legal Matters" therein.

Very truly yours,

/s/ Davis Wright Tremaine LLP

The Board of Directors AVI BioPharma, Inc.

We consent to the use of our reports dated March 15, 2006, with respect to the balance sheets of AVI BioPharma, Inc. as of December 31, 2005 and 2004, and the related statements of operations, shareholders' equity and comprehensive income (loss), and cash flows for each of the years in the three-year period ended December 31, 2005, management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2005, and the effectiveness of internal control over financial reporting as of December 31, 2005, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus,

/s/ KPMG LLP

Portland, Oregon October 26, 2006