Filed by BioSante Pharmaceuticals, Inc. Pursuant to Rule 425 under the Securities Act of 1933 and deemed filed pursuant to Rule 14a-6 under the Securities Exchange Act of 1934 Subject Company: Cell Genesys, Inc. Commission File No.: 333-161181

The following is a joint press release issued by BioSante Pharmaceuticals, Inc. and Cell Genesys, Inc. on September 22, 2009:

Forward-Looking Statements

This communication contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 about BioSante and Cell Genesys. Such statements include, but are not limited to, statements about the proposed transaction and its potential benefits to the BioSante and Cell Genesys stockholders, the expected timing of the completion of the transaction, the combined company's plans, objectives, expectations and intentions with respect to future operations and products and other statements that are not historical in nature, particularly those that utilize terminology such as "will," "potential," "could," "can," "believe," "intends," "continue," "plans," "expects," "estimates" or comparable terminology. Forward-looking statements are based on current expectations and assumptions, and entail various known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed in such forward-looking statements. Important factors known to BioSante and Cell Genesys that could cause actual results to differ materially from those expressed in such forward-looking statements include general business and economic conditions; the failure of the BioSante or Cell Genesys stockholders to approve the transaction or the failure of either party to meet any of the other conditions to the closing of the transaction; the failure to realize the anticipated benefits from the transaction or delay in realization thereof; the businesses of BioSante and Cell Genesys may not be combined successfully, or such combination may take longer, be more difficult, time-consuming or costly to accomplish than expected; and operating costs and business disruption following the merger, including adverse effects on employee retention and on business relationships with third parties, BioSante's need for and ability to obtain additional financing, the difficulty of developing pharmaceutical products, obtaining regulatory and other approvals and achieving market acceptance; the marketing success of BioSante's licensees or sublicensees and the success of clinical testing. Additional factors that could cause BioSante's and Cell Genesys's results to differ materially from those described in the forward-looking statements can be found in BioSante's recent registration statement on Form S-4 and BioSante's and Cell Genesys's most recent annual reports on Form 10-K and subsequent quarterly reports on Form 10-Q and other filings with the Securities and Exchange Commission, which are filed with the SEC and available at the SEC's web site at www.sec.gov and which discussions also are incorporated herein by reference. The information set forth herein speaks only as of the date hereof, and BioSante and Cell Genesys disclaim any intention and do not assume any obligation to update or revise any forward looking statement, whether as a result of new information, future events or otherwise.

Important Additional Information for Investors and Stockholders

This communication is being made in respect of the proposed business combination involving BioSante and Cell Genesys. In connection with the proposed transaction, BioSante has filed with the SEC, a registration statement on Form S-4, containing a joint proxy statement/prospectus and other relevant materials. The final joint proxy statement/prospectus has been mailed to the stockholders of record as of August 21, 2009, of BioSante and Cell Genesys. INVESTORS AND SECURITY HOLDERS OF BIOSANTE AND CELL GENESYS ARE URGED TO READ THE JOINT PROXY STATEMENT/PROSPECTUS (INCLUDING ANY AMENDMENTS OR SUPPLEMENTS) AND OTHER DOCUMENTS FILED WITH THE SEC CAREFULLY IN THEIR ENTIRETY BECAUSE THEY CONTAIN IMPORTANT INFORMATION ABOUT BIOSANTE, CELL GENESYS AND THE PROPOSED TRANSACTION.

Investors and security holders are be able to obtain free copies of the registration statement and the joint proxy statement/prospectus and other documents filed with the SEC by BioSante and Cell Genesys at the SEC's web site at www.sec.gov. Free copies of the registration statement and the joint proxy statement/prospectus and other documents filed with the SEC can also be obtained by directing a request to BioSante, Attention: Investor Relations, telephone: (847) 478-0500 or to Cell Genesys, Attention: Investor Relations, telephone (650) 266-3200. In addition, investors and security holders may access copies of the documents filed with the SEC by BioSante on BioSante's website at www.biosantepharma.com, and investors and security holders may access copies of the documents filed with the SEC by Cell Genesys's website at www.cellgenesys.com.

BioSante, Cell Genesys and their respective directors and executive officers and other persons may be deemed to be participants in the solicitation of proxies from the stockholders of BioSante and Cell Genesys in respect of the proposed transaction. Information regarding BioSante's directors and executive officers is available in its annual report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 16, 2009 and the proxy statement for BioSante's 2009 annual meeting of stockholders, filed with the SEC on April 27, 2009.

Information regarding Cell Genesys's directors and executive officers is available in its annual report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 9, 2009 and the proxy statement for Cell Genesys's 2009 annual meeting of stockholders, filed with the SEC on March 31, 2009. Investors and stockholders can obtain more detailed information regarding the direct and indirect interests of BioSante's and Cell Genesys's directors and executive officers in the merger by reading the definitive joint proxy statement/prospectus.



4

CELL GENESYS

400 Oyster Point Boulevard #525 South San Francisco, CA 94080 www.cellgenesys.com

BioSante Pharmaceuticals and Cell Genesys Announce Final Exchange Ratio for Merger

Exchange Ratio Fixed at 0.1828 BioSante Expects to Receive \$23.8 Million in Net Cash - \$1.7 Million More Than Anticipated

LINCOLNSHIRE, Illinois and SOUTH SAN FRANCISCO, California (September 22, 2009) — BioSante Pharmaceuticals, Inc. (NASDAQ: BPAX) and Cell Genesys, Inc. (NASDAQ: CEGE), today announced that they have determined the final exchange ratio as 0.1828 in connection with the previously announced merger between the companies. If the merger is completed, Cell Genesys stockholders will receive 0.1828 of a share of BioSante common stock for each share of Cell Genesys common stock they hold immediately prior to the effective time of the merger. Each company is scheduled to hold a special meeting of stockholders on September 30, 2009 at which time stockholders will be asked to approve the merger. BioSante and Cell Genesys expect to close the proposed merger promptly after such stockholder approvals have been obtained.

The exchange ratio was calculated pursuant to the terms of the definitive merger agreement entered into on June 29, 2009 between BioSante and Cell Genesys and was based on Cell Genesys's net cash, less certain expenses and liabilities, as of September 20, 2009, a date ten calendar days preceding the anticipated closing date of the merger. The parties determined that Cell Genesys's net cash as of such determination date was \$23.8 million. Since this amount exceeded the applicable net cash target amount of \$22.1 million by \$1.7 million, the exchange ratio was adjusted upwards from 0.1615 of a share of BioSante common stock to 0.1828 of a share of BioSante common stock. If the merger is completed, BioSante will issue an aggregate of approximately 20.2 million shares of BioSante common stock to holders of Cell Genesys common stock and current BioSante stockholders will own approximately 62 percent of the outstanding common stock of the combined company and current Cell Genesys stockholders will own approximately 38 percent of the outstanding common stock of the combined company, assuming the number of outstanding shares of BioSante and Cell Genesys common stock remains unchanged until immediately prior to the effective time of the merger.

About BioSante Pharmaceuticals, Inc.

BioSante is a specialty pharmaceutical company focused on developing products for female sexual health, menopause, contraception and male hypogonadism. BioSante's lead products include LibiGel® (transdermal testosterone gel) in Phase III clinical development by BioSante under a U.S. Food and Drug Administration (FDA) SPA (Special Protocol Assessment) for the treatment of female sexual dysfunction (FSD), and ElestrinTM (estradiol gel) developed through FDA approval by BioSante, indicated for the treatment of moderate-to-severe vasomotor symptoms associated with menopause, currently marketed in the U.S. Also in development are Bio-T-GelTM, a testosterone gel for male hypogonadism, and an oral contraceptive in Phase II clinical development using BioSante patented technology. The current market in the U.S. for estrogen and testosterone products is approximately \$2.5 billion and for oral contraceptives approximately \$3 billion. The company also is developing its calcium phosphate technology (CaP) for aesthetic medicine (BioLookTM), as a vaccine adjuvant, including for an H1N1 (swine flu) vaccine, and drug delivery. Additional information is available online at: www.biosantepharma.com.

About Cell Genesys, Inc.

Cell Genesys is headquartered in South San Francisco, California. For additional information, please visit Cell Genesys' website at www.cellgenesys.com.

Forward-Looking Statements

This news release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 about BioSante and Cell Genesys. Such statements include, but are not limited to, statements about the proposed transaction and the expected timing of the completion of the transaction, the expected net cash to be received by BioSante in connection with the transaction and other statements that are not historical in nature, particularly those that utilize terminology such as "will," "potential," "could," "can," "believe," "intends," "continue," "plans," "expects," "estimates" or comparable terminology. Forward-looking statements are based on current expectations and assumptions, and entail various known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed in such forward-looking statements. Important factors known to BioSante and Cell Genesys that could cause actual results to differ materially from those expressed in such forward-looking statements include general business and economic conditions; the failure of the BioSante or Cell Genesys stockholders to approve the transaction or the failure of either party to meet any of the other conditions to the closing of the transaction; the failure to realize the anticipated benefits from the transaction or delay in realization thereof; the businesses of BioSante and Cell Genesys may not be combined successfully, or such combination may take longer, be more difficult, time-consuming or costly to accomplish than expected; and operating costs and business disruption following the merger, including adverse effects on employee retention and on business relationships with third parties, BioSante's need for and ability to obtain additional financing, the difficulty of developing pharmaceutical products, obtaining regulatory and other approvals and achieving market acceptance; the marketing success of BioSante's licensees or sublicensees and the success of clinical testing. Additional factors that could cause BioSante's and Cell Genesys's results to differ materially from those described in the forward-looking statements can be found in BioSante's registration statement on Form S-4 and BioSante's and Cell Genesys's most recent annual reports on Form 10-K and subsequent quarterly reports on Form 10-Q and other filings with the Securities and Exchange Commission, which are filed with the SEC and available at the SEC's web site at www.sec.gov and which discussions also are incorporated herein by reference. The information set forth herein speaks only as of the date hereof, and BioSante and Cell Genesys disclaim any intention and do not assume any obligation to update or revise any forward looking statement, whether as a result of new information, future events or otherwise.

Important Additional Information for Investors and Stockholders

This communication is being made in respect of the proposed business combination involving BioSante and Cell Genesys. In connection with the proposed transaction, BioSante has filed with the SEC, a registration statement on Form S-4, containing a joint proxy statement/prospectus and other relevant materials. The final joint proxy statement/prospectus has been mailed to the stockholders of record as of August 21, 2009, of BioSante and Cell

Genesys. INVESTORS AND SECURITY HOLDERS OF BIOSANTE AND CELL GENESYS ARE URGED TO READ THE JOINT PROXY STATEMENT/PROSPECTUS (INCLUDING ANY AMENDMENTS OR SUPPLEMENTS) AND OTHER DOCUMENTS FILED WITH THE SEC CAREFULLY IN THEIR ENTIRETY BECAUSE THEY CONTAIN IMPORTANT INFORMATION ABOUT BIOSANTE, CELL GENESYS AND THE PROPOSED TRANSACTION.

Investors and security holders are be able to obtain free copies of the registration statement and the joint proxy statement/prospectus and other documents filed with the SEC by BioSante and Cell Genesys at the SEC's web site at www.sec.gov. Free copies of the registration statement and the joint proxy statement/prospectus and other documents filed with the SEC can also be obtained by directing a request to BioSante, Attention: Investor Relations, telephone: (847) 478-0500 or to Cell Genesys, Attention: Investor Relations, telephone (650) 266-3200. In addition, investors and security holders may access copies of the documents filed with the SEC by BioSante on BioSante's website at www.biosantepharma.com, and investors and security holders may access copies of the documents filed with the SEC by Cell Genesys's website at www.cellgenesys.com.

BioSante, Cell Genesys and their respective directors and executive officers and other persons may be deemed to be participants in the solicitation of proxies from the stockholders of BioSante and Cell Genesys in respect of the proposed transaction. Information regarding BioSante's directors and executive officers is available in its annual report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 16, 2009 and the proxy statement for BioSante's 2009 annual meeting of stockholders, filed with the SEC on April 27, 2009.

Information regarding Cell Genesys' directors and executive officers is available in its annual report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 9, 2009 and the proxy statement for Cell Genesys' 2009 annual meeting of stockholders, filed with the SEC on March 31, 2009. Investors and stockholders can obtain more detailed information regarding the direct and indirect interests of BioSante's and Cell Genesys's directors and executive officers in the merger by reading the definitive joint proxy statement/prospectus.

For shareholders of record that require an additional copy of the prospectus and proxy Please contact:
Computershare Trust Company, NA
PO box 43078
Providence Rhode Island 02940-3078
(781) 575-2879

For more information about BioSante, please contact: McKinney/Chicago Alan Zachary (312) 944-6784 ext. 316; azachary@mckinneychicago.com

For more information about Cell Genesys, please contact: Investor Relations Victoria Soares (650) 322-3200