ESSA Pharma Presents Preclinical Data Supporting the Therapeutic Potential of EPI-7386 at the 2021 American Association of Cancer Research (AACR) Annual Meeting

Houston, Texas and Vancouver, Canada, April 10, 2021 - ESSA Pharma Inc. ("ESSA" or the "Company") (Nasdaq: EPIX), a clinical-stage pharmaceutical company focused on developing novel therapies for the treatment of prostate cancer, today presented new preclinical data on ESSA's lead product candidate, EPI-7386, at the 2021 American Association of Cancer Research (AACR) Annual Meeting, which is taking place virtually April 10-15, 2021. EPI-7386 is an investigational, highly selective, oral, small molecule inhibitor of the N-terminal domain of the androgen receptor, which exhibits high potency, low metabolism and on-target specificity.

An e-poster presentation titled, "Comprehensive *in vitro* characterization of the mechanism of action of EPI-7386, an androgen receptor N-terminal inhibitor" (Abstract number: 1209) was published and available for viewing starting April 10th at 8:30 a.m. ET.

"Previously, we presented *in vitro* data demonstrating that EPI-7386 binds to the full-length androgen receptor, inhibits the transcription of AR-regulated genes, and physically interacts with the splice variant form AR-V7. Today, we added to these data by demonstrating that EPI-7386 can prevent the androgen receptor from binding to genomic DNA and is active against additional androgen receptor splice variants, including AR-v567es," said Dr. David R. Parkinson, President and Chief Executive Officer, ESSA Pharma Inc. "These preclinical data suggest EPI-7386 can potentially inhibit AR related transcription, a key driver of prostate cancer, and further supports our ongoing Phase 1 dose escalation study for metastatic-castration resistant prostate cancer patients, which is now dosing patients in the 800 mg cohort."

Dr. David R. Parkinson added, "Our data also showed that EPI-7386, in combination with enzalutamide, may result in broader and deeper inhibition of the AR pathway, underscoring the potential clinical benefit of combining EPI-7386 with current standard-of-care anti-androgen therapies for prostate cancer patients at earlier stages of the disease. We have recently entered into Phase 1/2 trial clinical partnerships with Janssen to evaluate EPI-7386 in combination with apalutamide or with abiraterone acetate + prednisone, as well as with Astellas to evaluate EPI-7386 in combination with enzalutamide."

The studies highlight new information about EPI-7386 including:

- In an *in vitro* cellular thermal shift assay (CETSA), EPI-7386 was shown to physically interact with both the full-length and the splice variant (AR-V7) form of AR.

- In the cellular model CWR-R1-AD1, driven by full-length AR, EPI-7386 inhibited the transcriptional activity of the AR similar to enzalutamide. EPI-7386 was also active in inhibiting AR transcriptional activity and reducing the cell viability in the AR splice variant AR-v567es-driven cellular model CWR-R1-D567 while enzalutamide showed no activity in this model. The AR-v567es splice variant is a clinically-detected AR splice variant that is constitutively active and is unresponsive to anti-androgens.

- EPI-7386 demonstrated the ability to strongly reduce binding of AR to genomic DNA in a chromatin immunoprecipitation with sequencing (ChIP-seq) assay conducted in the full-length AR driven model LNCaP.

- EPI-7386 exhibits superior activity to enzalutamide in the AR-V7-driven cellular model LNCaP95 by modulating AR-driven gene expression with or without the addition of an external androgen.

- In the full-length AR-driven cellular model LNCaP, EPI-7386 inhibits the androgen regulated transcriptome similar to enzalutamide but with a few notable qualitative and quantitative differences.

- In the same cellular model, combination treatment of EPI-7386 with enzalutamide displayed broader and deeper inhibition of AR-associated transcriptional activity than higher doses of each single agent alone.

- EPI-7386 in combination with 'lutamide molecules, including apalutamide, enzalutamide, and darolutamide, inhibited AR-associated transcriptional activity, demonstrating broader and deeper inhibition of the AR pathway in the AR amplified VCaP cellular model.

The poster is available on AACR's e-poster website and on the "Events & Presentations" section of the Company's website at www.essapharma.com.

About EPI-7386
EPI-7386 is an investigational, highly-selective, oral, small molecule inhibitor of the N-terminal domain of the androgen receptor. EPI-7386 is currently being studied in a Phase 1 clinical trial (NCT04421222) in men with metastatic castration-resistant prostate cancer ("mCRPC") whose tumors have progressed on current standard-of-care therapies. The Phase I clinical trial of EPI-7386 began in calendar Q3 of 2020 following FDA allowance of the IND and Health Canada acceptance. The U.S. FDA has granted Fast Track designation to EPI-7386 for the treatment of adult male patients with mCRPC resistant to standard-of-care treatment. ESSA retains all rights to EPI-7386 worldwide.

About Prostate Cancer
Prostate cancer is the second-most commonly diagnosed cancer among men and the fifth most common cause of male cancer death worldwide (Globocan, 2018). Adenocarcinoma of the prostate is dependent on androgen for tumor progression and depleting or blocking androgen action has been a mainstay of hormonal treatment for over six decades. Although tumors are often initially sensitive to medical or surgical therapies that decrease levels of testosterone, disease progression despite castrate levels of testosterone can lead to metastatic castration-resistant prostate cancer ("mCRPC"). The treatment of mCRPC patients has evolved rapidly over the past ten years. Despite these advances, many patients with mCRPC fail or develop resistance to existing treatments, leading to continued disease progression and limited survival rates.

About ESSA Pharma Inc.
ESSA is a clinical-stage pharmaceutical company focused on developing novel and proprietary therapies for the treatment of patients with prostate cancer. For more information, please visit www.essapharma.com and follow us on Twitter under @ESSAPharma.

Forward-Looking Statement Disclaimer
This release contains certain information which, as presented, constitutes "forward-looking information" within the meaning of the Private Securities Litigation Reform Act of 1995 and/or applicable Canadian securities laws. Forward-looking information involves statements that relate to future events and often addresses expected future business and financial performance, containing words such as "anticipate", "believe", "plan", "estimate", "expect", and "intend", statements that an action or event "may", "might", "could", "should", or "will" be taken or occur, or other similar expressions and includes, but is not limited to, statements regarding the preclinical results of EPI-7386, including the therapeutic potential thereof, the potential prevention of the androgen receptor from binding to genomic DNA, the potential to inhibit AR related transcription, the potential for a combination with enzalutamide to result in broader and deeper inhibition of the AR pathway and the potential clinical benefits of such combination more broadly and other

statements surrounding the Company's clinical evaluation of EPI-7386. Forward-looking statements and information are subject to various known and unknown risks and uncertainties, many of which are beyond the ability of ESSA to control or predict, and which may cause ESSA's actual results, performance or achievements to be materially different from those expressed or implied thereby. Such statements reflect ESSA's current views with respect to future events, are subject to risks and uncertainties and are necessarily based upon a number of estimates and assumptions that, while considered reasonable by ESSA as of the date of such statements, are inherently subject to significant medical, scientific, business, economic, competitive, political and social uncertainties and contingencies. In making forward looking statements, ESSA may make various material assumptions, including but not limited to (i) the accuracy of ESSA's financial projections; (ii) obtaining positive results of clinical trials; (iii) obtaining necessary regulatory approvals; and (iv) general business, market and economic conditions. Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein and in ESSA's Annual Report on Form 10-K dated December 15, 2020 under the heading "Risk Factors", a copy of which is available on ESSA's profile on EDGAR at www.sec.gov, and as otherwise disclosed from time to time on ESSA's SEDAR profile www.sedar.com.Forward-looking statements are made based on management's beliefs, estimates and opinions on the date that statements are made and ESSA undertakes no obligation to update forward-looking statements if these beliefs, estimates and opinions or other circumstances should change, except as may be required by applicable Canadian and United States securities laws. Readers are cautioned against attributing undue certainty to forward-looking statements.

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