AVEO Oncology Announces Refinanced Debt Facility

Provides Approximately $12.1M in Additional Cash Flow Over 2018-19

CAMBRIDGE, Mass. – January 2, 2018 – AVEO Oncology (NASDAQ: AVEO) today announced that it has completed the refinancing of its existing $20.0 million debt facility with Hercules Capital, Inc. and its affiliates, the terms of which enable approximately an additional $12.1 million in cash flow over 2018 and 2019, when compared to the prior loan. The new $20.0 million facility has a 42-month maturity from closing, no financial covenants, a lower interest rate and an interest-only period of no less than 12 months, which could be extended up to a maximum of 24 months, assuming the achievement of specified milestones relating to the development of tivozanib. Proceeds of the new facility will be used to retire the Company's existing $20.0 million of secured debt with Hercules.

"We estimate that the extension of the interest-only period related to the restructuring of our debt facility with Hercules would extend our cash runway into 2019," said Michael Bailey, president and chief executive officer of AVEO. "We continue to look forward to several potential key developments, including the receipt of top-line results from the TIVO-3 trial of tivozanib in third-line refractory renal cell carcinoma and, if positive, the filing of a new drug application with the FDA seeking marketing approval of tivozanib in the United States. In addition, during this time we also expect to report the phase 2 portion of the TiNivo combination trial with nivolumab."

Additional details with respect to this financing are available in the Company's Current Report on Form 8-K filed on January 2, 2018 with the Securities and Exchange Commission.

About AVEO

AVEO Oncology (AVEO) is a biopharmaceutical company dedicated to advancing a broad portfolio of targeted therapeutics for oncology and other areas of unmet medical need. The Company is focused on seeking to develop and commercialize its lead candidate tivozanib, a potent, selective, long half-life inhibitor of vascular endothelial growth factor 1, 2 and 3 receptors, in North America as a treatment for renal cell carcinoma (RCC) and other cancers. AVEO is leveraging multiple partnerships aimed at developing and commercializing tivozanib in oncology indications outside of North America, and at progressing its pipeline of novel therapeutic candidates in cancer and cachexia (wasting syndrome). Tivozanib (FOTIVDA®) is approved by the European Commission for the treatment of adult patients with advanced RCC in the European Union plus Norway and Iceland. For more information, please visit the company's website at www.aveooncology.com.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements of AVEO that involve substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this press release are forward-looking statements. The words "estimate," "anticipate," "believe," "expect," "intend," "may," "plan," "potential," "could," "should," "would," "seek," "look forward," "advance," "goal," "strategy," or the negative of these terms or other similar expressions, are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements include, among others, statements about: the extension of AVEO's cash runway and the duration of the interest-only period with respect to the refinanced debt facility with Hercules Capital, Inc. and its

affiliates; the potential achievement of the development milestones in connection with such refinanced debt facility; clinical, regulatory and commercial plans of AVEO and its partner EUSA Pharma with respect to tivozanib (FOTIVDA®); the expected timeline for reporting data from TIVO-3 and TiNivo; the role and expected benefits of tivozanib and other TKIs on a stand-alone basis, or in combination with or following immunotherapy; the value of AVEO's partnerships in advancing its pipeline; and AVEO's strategy, prospects, plans and objectives, including as they pertain specifically to tivozanib. AVEO has based its expectations and estimates on assumptions that may prove to be incorrect. As a result, readers are cautioned not to place undue reliance on these expectations and estimates. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that AVEO makes due to a number of important factors including risks relating to AVEO's ability to enter into and maintain its third-party collaboration agreements, and its ability, and the ability of its licensees and other partners, to achieve development and commercialization objectives under these arrangements; AVEO's ability, and the ability of its licensees, to demonstrate to the satisfaction of applicable regulatory agencies the safety, efficacy and clinically meaningful benefit of AVEO's product candidates, including tivozanib; AVEO'sability to successfully enroll and complete clinical trials, including the TIVO-3 and TiNivo studies; AVEO's ability to achieve and maintain compliance with all regulatory requirements applicable to its product candidates; AVEO's ability to obtain and maintain adequate protection for intellectual property rights relating to its product candidates and technologies; developments, expenses and outcomes related to AVEO's ongoing shareholder litigation; AVEO's ability to successfully implement its strategic plans; AVEO's ability to raise the substantial additional funds required to achieve its goals, including those goals pertaining to the development and commercialization of tivozanib; AVEO's ability to meet debt service requirements and comply with covenants in its debt agreements; unplanned capital requirements; significant fluctuations in interest rates; adverse general economic and industry conditions; competitive factors; and those risks discussed in the section titled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources" included in AVEO's Annual Report on Form 10-K for the year ended December 31, 2016, its quarterly reports on Form 10-Q and in other filings that AVEO may make with the SEC in the future. The forward-looking statements in this press release represent AVEO's views as of the date of this press release. AVEO anticipates that subsequent events and developments may cause its views to change. While AVEO may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. You should, therefore, not rely on these forward-looking statements as representing AVEO's views as of any date other than the date of this press release.

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