PRESS RELEASE

New Preclinical Results on Onxeo's AsiDNA™, First-in-Class DNA Repair Inhibitor, Point to Strong Synergy and Reversion of Tumor Resistance when combined to PARP inhibitors

- ***AsiDNA™ combined with olaparib* more than doubled the complete response rate observed with olaparib alone in an* in vivo *model of triple negative breast cancer resistant to PARP inhibitors***
- ***AsiDNA™ combined with olaparib inhibited tumor growth in an* in vivo *model of ovarian cancer resistant to olaparib***
- ***AsiDNA™ combined with various PARP inhibitors prevented the occurrence of resistance and reversed this resistance to PARP inhibitors after repeated exposure in* in vitro *models of triple negative breast cancer and small cell lung cancer***
- ***Together with the first activity results of the DRIIV-1 study of AsiDNA™ expected in Q4 2018, these data support a clinical development of the combination of AsiDNA™ with PARP inhibitors***

Paris (France), July 12, 2018 – 8.00 am CEST - Onxeo S.A. (Euronext Paris, NASDAQ Copenhagen: ONXEO), ("**Onxeo**" or "the **Company**"), a clinical-stage biotechnology company specializing in the development of innovative drugs in oncology, in particular against rare or resistant cancers, today announced new positive results from preclinical studies of AsiDNA™, its first-in-class DNA Repair inhibitor, in combination with PARP inhibitors (PARPi). The results of these extensive studies with different PARPi point to the ability of AsiDNA™ to prevent the occurrence of resistance and even to reverse the acquired resistance of the tumor cell after PARPi treatments. Furthermore, they show that the combination has a strong synergistic anti-tumor activity in *in vitro* and *in vivo* models of solid tumors resistant to PARPi (HR proficient). Together with the preliminary data on the activity and safety of AsiDNA™ expected in Q4 2018 from the DRIIV-1 clinical trial, these results support clinical development of AsiDNA™ in combination with PARP inhibitors, which should start from year-end 2018.

Judith Greciet, Chief Executive Officer of Onxeo, **said**: *"Onxeo is conducting an ambitious development program for AsiDNA™, notably translational, in combination with various anti-cancer agents in order to provide strategic information aimed at determining the indications and combinations to target in further clinical development as soon as the first results from DRIIV-1 are available. Assessing the combination of AsiDNA™ with PARPi is a priority, as their mechanisms of action are very complementary in indications with high unmet medical needs. Sales for the PARPi class are already substantial in ovarian cancer and are expected to increase markedly in the near-term as products gain access to multiple additional oncology indications. Our recent studies indicate that AsiDNA™ in combination with PARPi could enable PARPi to overcome the requirement of a genetic mutation such as BRCA-, and show a strong synergistic activity versus PARPi alone. Moreover, the combination appears to both prevent the occurrence of resistance to PARPi and reverse the acquired resistance, which may considerably expand treatment duration with PARPi. A treatment combining AsiDNA™ and PARPi could therefore significantly broaden the patient population eligible to PARPi and improve their efficacy, which is of great interest to the scientific community, the pharmaceutical industry and the patients for its potential to address resistant cancers."*

AsiDNA™ is a first-in-class DNA repair inhibitor in the field of DNA Damage Response (DDR) that mimics double-stranded DNA breaks in tumor cells, activating repair pathways, diverting repair enzymes from the target and finally depleting the cell through a unique mechanism of agonist and decoy.

Data show that in *in vitro* models of HR proficient TNBC (triple negative breast cancer) and SCLC (small cell lung cancer), AsiDNA™ **maintains PARP1 expression**, the repair enzyme inhibited by PARP inhibitors, and **abrogates the occurrence of resistance to PARPi**, including in models of cancers resistant to PARPi. Down regulation of the PARP1 enzyme is one of the mechanisms that supports the occurrence of resistance to PARPi inhibitors[1]. As AsiDNA™ hyper-activates repair enzymes, an up regulation of PARP1 expression following treatment with AsiDNA™ or with AsiDNA™ associated to PARPi support the use of AsiDNA™ to maintain the sensitivity to PARPi treatment.

Furthermore, combination treatment of olaparib with AsiDNA™ **more than doubles the complete response rate observed with olaparib alone** (71% vs. 33%) in an *in vivo* model of HR proficient TNBC model and **inhibits tumor growth** in a humanized Patient-Derived Xenograft (PDX) mice model of ovarian cancer resistant to olaparib. PDX models are considered highly predictive of clinical behavior[2].

The Company will submit the detailed results of these preclinical studies to leading peer-reviewed publications and international scientific conferences.

Francoise Bono, Chief Scientific Officer of Onxeo, concluded: *"These most recent data validate our disruptive approach to DNA-targeting and confirm the broad opportunities for our lead molecule thanks to its unique mechanism of action. Our team has built an extremely solid body of preclinical evidence, both in-vitro and in highly predictive humanized in-vivo models, which shows the potential of AsiDNA™ to reverse the resistance to PARP inhibitors and the strong synergy of their combination. This is the first part of our extensive translational plan which aims at confirming the full potential of AsiDNA™ in combination with other anticancer agents such as chemotherapies or epigenetic compounds, including belinostat. Additional data on these other possible combinations will be available after the summer to further inform the clinical development of AsiDNA™ in combinations offering the potential for significant therapeutic improvement."*

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* *Olaparib is the first PARPi approved in December 2014 by both the FDA and the EMA.*

[1] *Montoni A, Robu M, Pouliot E, Shah GM. Resistance to PARP-Inhibitors in Cancer Therapy. Front Pharmacol. (2013 Feb) 27;4:18. doi: 10.3389/fphar.2013.00018*

[2] *Tentler JJ, Tan AC, Weekes CD, et al. Patient-derived tumour xenografts as models for oncology drug development. (2012 Jun) Nature Reviews. Clinical Oncology (Review). **9** (6): 338–50. doi:10.1038/nrclinonc.2012.61*

About Onxeo

Onxeo (Euronext Paris, NASDAQ Copenhagen: ONXEO) is a French biotechnology company developing innovative oncology drugs based on DNA-targeting and epigenetics, two of the most sought-after mechanisms of action in cancer treatment today. The Company is focused on bringing early-stage first-in-class or disruptive compounds (proprietary, acquired or in-licensed) from translational research to clinical proof-of-concept, a value-creating inflection point appealing to potential partners.

Onxeo is developing **AsiDNA™**, a first-in-class DNA break repair inhibitor based on a unique decoy mechanism. AsiDNA™ has already successfully completed a Phase I trial in metastatic melanoma via local administration and is currently being evaluated for systemic (IV) administration in solid tumors in the DRIIV phase I study ((DNA Repair Inhibitor administered IntraVenously).

AsiDNA™ is the first compound generated from **platON™**, the Company's proprietary chemistry platform of decoy oligonucleotides based on three components, a sequence of double strand oligonucleotides, a linker and a cellular uptake facilitator. PlatON™ will continue to generate innovative compounds targeting tumor DNA functions and broaden Onxeo's pipeline.

Onxeo's R&D pipeline also includes **belinostat**, an HDAC inhibitor (epigenetics) currently evaluated in oral form to be used in combination with other anti-cancer agents for liquid or solid tumors. Belinostat is already conditionally FDA-approved in the US as a 2nd line treatment for patients with peripheral T cell lymphoma and marketed in the US by Onxeo's partner, Spectrum Pharmaceuticals, under the name Beleodaq® (belinostat IV form).

For further information, please visit www.onxeo.com.

Forward looking statements

This communication expressly or implicitly contains certain forward-looking statements concerning Onxeo and its business. Such statements involve certain known and unknown risks, uncertainties and other factors, which could cause the actual results, financial condition, performance or achievements of Onxeo to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Onxeo is providing this communication as of this date and does not undertake to update any forward-looking statements contained herein as a result of new information, future events or otherwise. For a discussion of risks and uncertainties which could cause actual results, financial condition, performance or achievements of Onxeo to differ from those contained in the forward-looking statements, please refer to the section 5.7.1.4 "Risk Factors" ("*Facteurs de Risque*") of the 2017 registration document filed with the *Autorité des marchés financiers* on April 25, 2018 under number D.18-0389, which is available on the *Autorité des marchés financiers* website (www.amf-france.org) or on the Company's website (www.onxeo.com).

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