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Hormone-induced luteolysis on physiologically persisting *Corpora lutea* in Eurasian and Iberian Lynx (*Lynx lynx* and *L. pardinus*)

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1 **Hormone-induced luteolysis on physiologically persisting *Corpora lutea* in Eurasian**
2 **and Iberian Lynx (*Lynx lynx* and *L. pardinus*)**

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9 Abstract

10 The Iberian lynx (*Lynx pardinus*) is the most critically endangered felid. A high reproductive
11 success within the Iberian Lynx Conservation Breeding Program (ILCBP) is crucial to
12 maintaining the goal of reintroducing captive born offspring to the wild and thus increasing
13 the population. Lynx follow a unique reproductive strategy with a mono-estrous cycle and
14 persisting *Corpora lutea* (CLs) over many years. These persistent CLs constantly produce
15 progesterone (on average 5ng/mL) and are hypothesised to hinder a poly-estrous cyclicity in
16 lynx. The aim of this study was to evaluate whether artificial luteolysis can be achieved with
17 common luteolytic drugs, and if luteolysis would induce a second estrus naturally. We
18 observed a functional regression of lynx CLs after artificial luteolysis with 2.5 µg/kg
19 bodyweight (BW) Prostaglandin F2α analogue (Cloprostenol) administered three times every
20 16 hours. We could see a similar effect when combining Cloprostenol with other drugs like an
21 anti-gestagen (Aglepristone) or a Dopamin-Agonist (Prolactin-Inhibitor, Cabergolin) or by
22 prolonging the Cloprostenol administration to a total of five days. However, the sample size
23 was too small to draw conclusions about which protocol is superior or if combining different
24 drugs would result in a positive synergism. Neither structural regression of CLs nor
25 subsequent spontaneous estrus induction was induced with any of these treatments. We

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