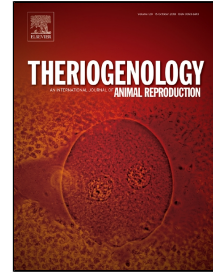


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Blocking connexin channels during vitrification of immature cat oocytes improves maturation capacity after warming.



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1 **Blocking connexin channels during vitrification of immature cat oocytes improves**
2 **maturation capacity after warming.**

3

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12

13 **Abstract**

14 In the domestic cat, nuclear maturation and embryo development after vitrification of immature
15 oocytes have been obtained but developmental competence after warming remains low. It has
16 been reported that during folliculogenesis, the association and communication between the
17 oocyte and the surrounding cumulus cells through connexin-based gap junctions is essential for
18 normal oocyte and follicular development. Gap junctions result from the head-to-head
19 interaction of two hemichannels; however, there is always a population of hemichannels not
20 incorporated into gap junctions. These unopposed hemichannels are normally closed but may
21 open under certain stress conditions, potentially also during vitrification and warming, turning
22 them into toxic pores inducing cell injury and cell death. The aim of our study was to test
23 whether inhibiting connexin 37 (Cx37) and connexin 43 (Cx43) channels with the connexin-

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