

## Dr. Stephen Downs' Publications

- 2010** Downs, S.M. 2010. Regulation of the G2/M transition in rodent oocytes. *Mol Reprod Dev* 77: 566-585.
- Downs, S.M., Ya, R., Davis, C. 2010. Role of AMPK throughout meiotic maturation in the mouse oocyte: evidence for promotion of polar body formation and suppression of premature activation. *Mol. Reprod. Dev.* 77: 888-899
- 2009** Downs, S.M., Mosey, J.L. and J. Klinger. 2009. Fatty acid oxidation and meiotic resumption in mouse oocytes. *Mol Reprod Dev* 76: 844-853.
- Chen, J., Chi M.M., Moley K.H. and S.M. Downs. 2009. cAMP pulsing of denuded mouse oocytes increases meiotic resumption via activation of AMP-activated protein kinase. *Reproduction* 138: 759-770.
- 2008** Downs, S.M. and J. Chen. 2008. EGF-like peptides mediate FSH-induced maturation of cumulus cell-enclosed mouse oocytes. *Mol. Reprod. Dev.*, 75:105-114.
- Chen, J. and S. Downs. 2008. AMP-activated protein kinase is involved in hormone-induced mouse oocyte meiotic maturation *in vitro*. *Dev. Biol.*, 313:47-57 (published online in fall of 2007).
- 2007** LaRosa, Cean and S.M. Downs. 2007. Meiotic induction by heat stress in Mouse oocytes: involvement of AMP-activated protein kinase and MAPK family members. *Biol. Reprod.*, 476-485.
- 2006** Downs, S.M., R. Gilles, C. Vanderhoef, P.G. Humpherson, and H.J. Leese. 2006. Differential response of cumulus cell-enclosed and denuded mouse oocytes in a meiotic induction model system. *Mol. Reprod. Dev.* 73: 379-389.
- Chen, J., E. Hudson, M.M. Chi, A.S. Chang, K.H. Moley, G.D. Hardie and S.M. Downs. 2006. AMPK regulation of mouse oocyte meiotic resumption *in vitro*. *Dev. Biol.*, 291:227-238.
- Downs, S.M. and J. Chen. 2006. Induction of meiotic maturation in mouse oocytes by adenosine analogs. *Mol. Reprod. Dev.*, 73:1159-1168.
- 2005** LaRosa, C. and S.M. Downs. 2005. MEK inhibitors block AICAR-induced maturation in mouse oocytes by a MAPK-independent mechanism. *Mol. Reprod. Dev.* 70: 235-245.
- LaRosa, C. and S.M. Downs. 2005. Stress stimulates adenosine monophosphate-activated protein kinase and meiotic resumption in mouse oocytes. Publ. Online 10.1095/*Biolreprod.*, 105.046904.
- 2004** Colton, S.A. and S.M. Downs. 2004. A potential role for the sorbitol pathway in the meiotic dysfunction exhibited by oocytes from diabetic mice. *J. Exp. Zool.* 301A:439-448.
- 2003** Downs, S.M. and A. Verhoeven. 2003. Glutamine and the maintenance of meiotic arrest in mouse oocytes: influence of culture medium, glucose and cumulus cells. *Mol. Reprod. Dev.*, 66:90-97.
- Colton, S.A., P.G. Humpherson, H.J. Leese and S.M. Downs. 2003. Physiological changes in oocyte-cumulus cell complexes from diabetic mice that potentially influence meiotic regulation. *Biol. Reprod.*, 69:761-770.
- 2002** Colton, S.A., G.M. Pieper and S.M. Downs. 2002. Altered meiotic regulation in oocytes from

- diabetic mice. *Biol. Reprod.*, 67:220-231.
- Downs, S.M., P.G. Humpherson and H.J. Leese. 2002. Pyruvate utilization by mouse oocytes is influenced by meiotic status and the cumulus oophorus. *Mol. Reprod. Dev.*, 62:113-123.
- Downs, S.M., E.R. Hudson and D.G. Hardie. 2002. A potential role for AMP-activated protein kinase in meiotic induction in mouse oocytes. *Dev. Biol.* 245:200-212.
- 2001** Downs, S.M., J. Cottom and M. Hunzicker-Dunn. 2001. Protein kinase C and meiotic regulation in isolated mouse oocytes. *Mol. Reprod. Dev.*, 58:101-115.
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- 2000** Downs, S.M. and E.D. Hudson. 2000. Energy substrates and the completion of spontaneous meiotic maturation. *Zygote*, 8:339-351.
- 1999-2000** Downs, S.M. 1999. Adenosine blocks hormone-induced meiotic maturation by suppressing purine *de novo* synthesis. *Mol. Reprod. Dev.*, 56:172-179.
- 1998-99** Downs, S.M. 1999. Uptake and metabolism of adenosine mediate a meiosis-arresting action on mouse oocytes. *Mol. Reprod. Dev.*, 53:208-221.
- 1997-98** Downs, S.M., P.G. Humpherson and H.J. Leese. 1998. Substrate utilization and maturation of cumulus cell-enclosed mouse oocytes: evidence that pyruvate oxidation does not mediate meiotic induction. *J. Reprod. Fert.*, 110:1-10.
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- Downs, S.M. 1998. Precursors of the purine backbone augment the inhibitory action of hypoxanthine and dibutyryl cAMP on mouse oocyte maturation. *J. of Exper. Zool.*, 282:376-384.
- Downs, S.M. 1997. Hypoxanthine regulation of oocyte maturation in the mouse: insights using hypoxanthine phosphoribosyltransferase-deficient animals. *Biol. Reprod.*, 57:54-62.
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- Downs, S.M. and A.M. Mastropolo. 1997. Culture conditions affect meiotic regulation in cumulus cell-enclosed mouse oocytes. *Mol. Reprod. Dev.* 46: 551-566.
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- 1995-96** Downs, S.M., P.G. Humpherson, K.L. Martin and H.J. Leese. 1996. Glucose utilization during gonadotropin-induced meiotic maturation in cumulus cell-enclosed mouse oocytes. *Mol. Reprod. Dev.* 44:121-131.
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- 1993-94** Downs, S.M. and Mastropolo, A.M. 1994. The participation of energy substrates in the control of meiotic maturation in murine oocytes. *Dev. Biol.* 162, 154-168.
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- 1990-91** Downs, S.M. 1990. Stimulation of parthenogenesis in mouse ovarian follicles by inhibitors of IMP dehydrogenase. *Biol. Reprod.*, 43:427-436.
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- 1989-90** Downs, S.M. 1989. Specificity of epidermal growth factor action on maturation of the murine oocyte and cumulus oophorus *in vitro*. *Biol. Reprod.*, 41:371-379.
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- 1988-89** Downs, S.M., S.A.J. Daniel, E.A. Bornslaeger, P.C. Hoppe and J.J. Eppig. 1989. Maintenance of meiotic arrest in mouse oocytes by purines: modulation of cAMP levels and cAMP phosphodiesterase activity. *Gamete Res.*, 23:323-334.
- 1987-88** Downs, S.M., S.A.J. Daniel and J.J. Eppig. 1988. Induction of maturation in cumulus cell-enclosed mouse oocytes by follicle-stimulating hormone and epidermal growth factor: Evidence for a positive stimulus of somatic cell origin. *J. Exp. Zool.* 245:86-96.
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