

## **Curriculum vitae**

### **Mark C. Hall**

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### **Education**

Trinity College, Hartford, CT	Biology	B.S. 1994
University of North Carolina, Chapel Hill, NC	Molecular Biology	Ph.D. 1998
NIEHS, RTP, NC	Molecular Genetics	Post-doc 1998-2001
University of North Carolina, Chapel Hill, NC	Biochemistry	Post-doc 2001-2004

### **Professional Experience**

Associate professor, Department of Biochemistry, Purdue University, 2012-present  
Assistant professor, Department of Biochemistry, Purdue University, 2004-2012  
Post-doctoral research associate, Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill, 2001-2004  
Post-doctoral research fellow, Lab of Molecular Genetics, National Institute of Environmental Health Sciences, 1998-2001  
Graduate research assistant, Biology Department, University of North Carolina at Chapel Hill, 1995-1998  
Graduate teaching assistant, Biology Department, University of North Carolina at Chapel Hill, 1994-1995

### **Peer-reviewed Publications (reverse chronological)**

- 44).** DeMarco AG, Milholland KL, Pendleton AL, Whitney, JJ , Wesenberg DT, Nambiar M, Pepe A, Paula S, Chmielewski J, Wisecaver JH, Tao WA, and **Hall MC** (2020). Conservation of Cdc14 phosphatase specificity in plant fungal pathogens: implications for antifungal development. *Sci Rep* 10: article 12073. PMID: 32694511
- 43).** Qin L, Mizrak A, Guimarães DSPSF, Tambrin HM, Morgan DO, and **Hall MC** (2019). The pseudosubstrate inhibitor Acm1 inhibits the anaphase-promoting complex/cyclosome by combining high-affinity activator binding with disruption of Doc1/Apc10 function. *J Biol Chem*, 294(46):17249-17261. PMID: 31562243
- 42).** Serratore ND, Baker KM, Macadlo LA, Gress AR, Powers BL, Atallah N, Westerhouse KM, **Hall MC**, Weake VM, and Briggs SD (2018). A novel sterol-signaling pathway governs azole antifungal drug 5 resistance and hypoxic gene repression in *S. cerevisiae*. *Genetics*, 208(3):1037-55. PMID: 29263028
- 41).** Powers BL, and **Hall, MC** (2017). Re-evaluating the role of Cdc14 phosphatase in reversal of Cdk phosphorylation during mitotic exit. *J Cell Sci*. 130: 2673-2681. PMID: 28663385
- 40).** Powers BL, Hall H, Charbonneau H, and **Hall MC** (2017). A substrate trapping method for identification of direct Cdc14 phosphatase targets. *Methods Mol Biol* **1505**:119-132. PMID: 27826861.
- 39).** Powers BL, Melesse M, Eissler CL, Charbonneau H, and **Hall MC** (2016). Measuring activity and specificity of protein phosphatases. *Methods Mol Biol* **1342**:221-35. PMID: 26254927

- 38). Qin L, Guimarães DS, Melesse M, and **Hall MC** (2016). Substrate recognition by the Cdh1 destruction box receptor is a general requirement for APC/C<sup>Cdh1</sup>-mediated proteolysis. *J Biol Chem* **291**:15564-74. PMID: 27226622
- 37). Iliuk A, Li L, Melesse M, **Hall MC**, Tao WA (2016). Multiplexed Imaging of Protein Phosphorylation on Membranes Based on Ti(IV) Functionalized Nanopolymer. *Chem Biochem* **17**(10): 900-3. PMID: 27037847
- 36). Li C, Melesse M, Zhang S, Hao C, Wang C, Zhang H, **Hall MC\***, Xu JR\* (2015). FgCDC14 regulates cytokinesis, morphogenesis, and pathogenesis in *Fusarium graminearum*. *Mol Microbiol* **98**(4):770-86. PMID: 26256689; \* co-corresponding authors
- 35). Miller DP, Hall H, Chaparian R, Mara M, Mueller A, **Hall MC**, Shannon KB (2015). Dephosphorylation of Iqg1 by Cdc14 regulates cytokinesis in budding yeast. *Mol Biol Cell* **26**(16):2913-26. PMID: 26085509
- 34). Aryal U, McBride Z, Li J, Xiong X, Y, Kihara D, Xie J, **Hall MC**, and Szymanski DB (2014). A proteomic strategy for global analysis of plant protein complexes. *The Plant Cell* **26**(10): 3867-3882. PMID: 25293756
- 33). Melesse M, Choi E, Hall H, Walsh MJ, Geer MA, and **Hall MC** (2014). Timely activation of budding yeast APC<sup>Cdh1</sup> involves degradation of its inhibitor, Acm1, by an unconventional proteolytic mechanism. *PLoS ONE* **9**(7): e103517. PMID: 25072887
- 32). Eissler CL, Mazón G, Powers BL, Savinov SB, Symington LL, and **Hall MC** (2014). The Cdk/Cdc14 module controls activation of the Yen1 Holliday junction resolvase to promote genome stability. *Mol Cell* **54**: 80-93. PMID: 24631283  
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- 31). Yang T, Eissler, CL, **Hall MC**, and Parker LL (2013). A multiple reaction monitoring (MRM) method to detect Bcr-Abl kinase activity in CML using a peptide biosensor. *PLoS One* **8**(2):e56627. PMID: 23437189
- 30). Yang Z, Huh S, Drennan JM, Kathuria H, Martinez JS, Tsuda H, **Hall MC**, and Clemens JC (2012). *Drosophila* Vap-33-1 is Required for Axonal Localization of Dscam Isoforms. *J Neuroscience* **32**(48):17241-17250. PMID: 23197716
- 29). Schoenherr JA, Drennan JM, Martinez JS, Chikka MR, **Hall MC**, Chang HC, and Clemens JC (2012). *Drosophila* activated Cdc42 kinase activity is anti-apoptotic. *PLoS Genetics* **8**(5):e1002725. PMID: 22615583
- 28). Bremmer SC, Hall H, Martinez JS, Eissler CL, Hinrichsen T, Rossie S, Parker LL, **Hall MC\***, and Charbonneau H\* (2012). Cdc14 phosphatases preferentially dephosphorylate a subset of cyclin-dependent kinase (Cdk) sites containing phosphoserine. *J Biol Chem* **287**(3): 1662-1669. PMID: 22117071; \* co-corresponding authors
- 27). Martinez JS, Hall H, Bartolowits MD, and **Hall MC** (2012). Acm1 contributes to nuclear positioning by inhibiting Cdh1-substrate interactions. *Cell Cycle* **11**(2): 384-394. PMID: 22189709
- 26). Chin CF, Bennett AM, Ma WK, **Hall MC**, and Yeong FM (2012). Dependence of Chs2 ER export on dephosphorylation by cytoplasmic Cdc14 ensures that septum formation follows mitosis. *Mol Biol Cell* **23**(1): 45-58. PMID: 22072794
- 25). Eissler CL, Bremmer SC, Martinez JS, Parker LL, Charbonneau H, and **Hall MC** (2011). A general strategy for studying multi-site protein phosphorylation using label-free selected reaction monitoring mass spectrometry. *Anal Biochem* **418**: 267-275. PMID: 21810403

- 24). Balasubramaniam D, Paul LN, Homan KT, **Hall MC**, and Stauffacher CV (2011). Specificity of HCPTP variants towards EphA2 tyrosines by quantitative selected reaction monitoring. *Protein Science* **20**: 1172-1181. PMID: 21538645
- 23). Iliuk A, Martinez JS, **Hall MC**, and Tao WA (2011). Novel phosphorylation assay based on multi-functionalized soluble nanopolymer. *Anal Chem* **83**: 2767-2774. PMID: 21395237
- 22). Balasubramaniam D, Eissler CL, Stauffacher CV, and **Hall MC** (2010). Use of selected reaction monitoring data for label-free quantification of protein modification stoichiometry. *Proteomics* **10**: 4301-4305. PMID: 21046619
- 21). Shin M, Mavila N, Wang W, Alvarez SV, **Hall MC** and Andrisani OM (2009). Time-dependent activation of Phox2a by the cAMP pathway modulates onset and duration of p27Kip1 transcription. *Mol Cell Biol.* **18**: 4878-4890. PMID: 19564421
- 20). Choi E, Dial JM, Jeong D, and **Hall MC**. Unique D-box and KEN-box sequences limit ubiquitination of Acm1 and promote pseudosubstrate inhibition of the anaphase-promoting complex. *J. Biol. Chem.* **283**(35): 23701-10. PMID: 18596038
- 19). **Hall MC\***, Jeong D, Henderson JT, Choi E, Bremmer SC, Iliuk AB, and Charbonneau H (2008). Cdc28 and Cdc14 control stability of the anaphase-promoting complex inhibitor Acm1. *J. Biol. Chem.* **283**(16): 10396-407. PMID: 18287090; \* corresponding author
- 18). Fraser CM, Thompson MG, Shirley AM, Ralph J, Schoenherr JA, Sinlapadech T, **Hall MC**, and Chapple C (2007). Related Arabidopsis serine carboxypeptidase-like sinapoylglucose acyltransferases display distinct but overlapping substrate specificities. *Plant Physiology* **144**: 1986-1999. PMID: 17600138
- 17). Martinez, JS, Jeong, D-E., Choi E, Billings BM, and **Hall MC** (2006). Acm1 is a negative regulator of the Cdh1-dependent anaphase-promoting complex/cyclosome in budding yeast. *Mol. Cell. Biol.* **26**(24):9162-9176. PMID: 17030612
- 16). **Hall MC**, Warren EN, and Borchers CH (2004). Multi-kinase phosphorylation of the APC/C activator Cdh1 revealed by mass spectrometry. *Cell Cycle* **3**(10): 1278-1284. PMID: 15467459
- 15). **Hall MC**, Torres MP, Schroeder G, and Borchers CH (2003). Mnd2 and Swm1 are core subunits of the *Saccharomyces cerevisiae* anaphase-promoting complex. *J. Biol. Chem.* **278**(19): 16698-16705. PMID: 12609981
- 14). **Hall MC**, Shcherbakova PV, Borchers CH, Dial JM, Tomer KB, and Kunkel TA (2003). DNA binding by yeast Mlh1 and Pms1: Implications for DNA mismatch repair. *Nucleic Acids Res.* **31**(8): 2025-2034. PMID: 12682353
- 13). Xiao T, Hall H, Kizer KO, Shabata Y, **Hall MC**, Borchers CH, and Strahl BD (2003). Phosphorylation of RNA polymerase II CTD regulates H3 methylation in yeast. *Genes & Dev.* **17**: 654-663. PMID: 12629047
- 12). Drotschmann K, **Hall MC**, Shcherbakova PV, Wang H, Erie DA, Brownell FR, Kool ET, and Kunkel TA (2002). DNA binding properties of the yeast Msh2-Msh6 and Mlh1-Pms1 heterodimers. *Biol. Chem.* **383**(6): 969-975. PMID: 12222686
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- 9). Shcherbakova PV, **Hall MC**, Lewis MS, Bennett SE, Martin KJ, Bushel PR, Afshari CA, and Kunkel TA (2001). Inactivation of DNA mismatch repair by increased expression of yeast *MLH1*. *Mol. Cell. Biol.* **21**: 940-951. PMID: 11154280

- 8). **Hall MC** and Kunkel TA (2001). Purification of eukaryotic MutL homologs from *Saccharomyces cerevisiae* using self-cleaving affinity technology. *Prot. Exp. & Purif.* **21**: 333-342. PMID: 11237696
- 7). Borchers C, Peter JF, **Hall MC**, Kunkel TA, and Tomer KB (2000). Identification of in-gel digested proteins by complementary peptide mass fingerprinting and tandem mass spectrometry data obtained on an electrospray ionization quadrupole time-of-flight mass spectrometer. *Anal. Chem.* **72**(6): 1163-8. PMID: 10740854
- 6). **Hall MC** and Matson SW (1999). Helicase motifs: the engine that powers DNA unwinding. *Mol. Microbiol.* **34**(5): 867-77. PMID: 10594814
- 5). \*Mechanic LE, \***Hall MC**, and Matson SW (1999). *Escherichia coli* DNA helicase II is active as a monomer. *J. Biol. Chem.* **274**(18): 12488-98. PMID: 10212225  
\*both authors contributed equally
- 4). **Hall MC** and Matson SW (1999). The *Escherichia coli* MutL protein physically interacts with MutH and stimulates the MutH-associated endonuclease activity. *J. Biol. Chem.* **274**(3): 1306-12. PMID: 9880500
- 3). **Hall MC**, Jordan JR, and Matson SW (1998). Evidence for a physical interaction between the *Escherichia coli* methyl-directed mismatch repair proteins MutL and UvrD. *EMBO* **17**(5): 1535-41. PMID: 9482750
- 2). **Hall MC**, Ozsoy AZ, and Matson SW (1998). Site-directed mutations in motif VI of *Escherichia coli* DNA helicase II result in multiple biochemical defects: evidence for the involvement of motif VI in the coupling of ATPase and DNA binding activities via conformational changes. *J. Mol. Biol.* **277**: 257-71. PMID: 9514760
- 1). **Hall MC** and Matson SW (1997). Mutation of a highly conserved arginine in motif IV of *Escherichia coli* DNA helicase II results in an ATP binding defect. *J. Biol. Chem.* **272**(30): 18614-20. PMID: 9228029