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16. Liang H, Lim HH, Venkitaraman A, Surana U. Cdk1 promotes kinetochore bi-orientation and regulates Cdc20 expression during recovery from spindle checkpoint arrest. *EMBO J* 2012;31:403–16.
17. Tighe A, Staples O, Taylor S. Mps1 kinase activity restrains anaphase during an unperturbed mitosis and targets Mad2 to kinetochores. *J Cell Biol* 2008;181:893–901.
18. Daniel J, Coulter J, Woo JH, Wilsbach K, Gabrielson E. High levels of the Mps1 checkpoint protein are protective of aneuploidy in breast cancer cells. *Proc Natl Acad Sci U S A* 2011;108:5384–9.
19. Landi MT, Dracheva T, Rotunno M, Figueroa JD, Liu H, Dasgupta A, et al. Gene expression signature of cigarette smoking and its role in lung adenocarcinoma development and survival. *PLoS One* 2008;3:e1651.
20. Salvatore G, Nappi TC, Salerno P, Jiang Y, Garbi C, Ugolini C, et al. A cell proliferation and chromosomal instability signature in anaplastic thyroid carcinoma. *Cancer Res* 2007;67:10148–58.
21. Yuan B, Xu Y, Woo JH, Wang Y, Bae YK, Yoon DS, et al. Increased expression of mitotic checkpoint genes in breast cancer cells with chromosomal instability. *Clin Cancer Res* 2006;12:405–10.
22. Ahn CH, Kim YR, Kim SS, Yoo NJ, Lee SH. Mutational analysis of TTK gene in gastric and colorectal cancers with microsatellite instability. *Cancer Res Treat* 2009;41:224–8.
23. Manchado E, Guillaumot M, Malumbres M. Killing cells by targeting mitosis. *Cell Death Differ* 2012;19:369–77.
24. Kusakabe K, Ide N, Daigo Y, Itoh T, Yamamoto T, Hashizume H, et al. Discovery of imidazo[1,2-b]pyridazine derivatives: selective and orally available Mps1 (TTK) kinase inhibitors exhibiting remarkable antiproliferative activity. *J Med Chem* 2015;58:1760–75.
25. Topham C, Taylor S. Mitosis and apoptosis: how is the balance set? *Curr Opin Cell Biol* 2013;25:1–6.
26. Abrieu A, Magnaghi-Jaulin L, Kahana JA, Peter M, Castro A, Vigneron S, et al. Mps1 is a kinetochore-associated kinase essential for the vertebrate mitotic checkpoint. *Cell* 2001;106:83–93.
27. Stucke VM, Silljé HH, Arnaud L, Nigg EA. Human Mps1 kinase is required for the spindle assembly checkpoint but not for centrosome duplication. *EMBO J* 2002;21:1723–32.
28. Jemaà M, Galluzzi L, Kepp O, Brands M, Boemer U, Koppitz M, et al. Characterization of novel MPS1 inhibitors with preclinical anticancer activity. *Cell Death Differ* 2013;11:1532–45.
29. Fabian MA, Biggs WH, Treiber DK, Atteridge CE, Azimioara MD, Benedetti MG, et al. A small molecule-kinase interaction map for clinical kinase inhibitors. *Nat Biotechnol* 2005;23:329–36.
30. Schmidt M, Budirahardja Y, Klompaker R, Medema RH. Ablation of the spindle assembly checkpoint by a compound targeting Mps1. *EMBO Rep* 2005;6:866–72.
31. Janssen A, Kops GJ, Medema RH. Elevating the frequency of chromosome mis-segregation as a strategy to kill tumor cells. *Proc Natl Acad Sci U S A* 2009;106:19.
32. Gonzalez-Angulo AM, Morales-Vasquez F, Hortobagyi GN. Overview of resistance to systemic therapy in patients with breast cancer. *Adv Exp Med Biol* 2007;608:1–22.

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Novel Mps1 Kinase Inhibitors with Potent Antitumor Activity

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