

## CRISPR mediated ATR activity on Oncological Cells

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### Abstract

ATR mediates several functions during the DNA damage and as a result of replication fork gets stalled up. This will not allow the replication fork to transit through other phases of the cell cycle. Consequently, DNA synthesis will not carry out further. This ubiquitous kinase has known to exhibit anti- cancer effects found in a recent study. The most powerful and unique technique CRISPR- Cas9 has been utilized to analyse the effect of ATR on cancerous cells. Inhibition of ATR leads the hampering of DNA repair pathways of cancer cells thus showing anti- cancer effects. AZD6738, a potent ATR inhibitor applied to single guide RNA screens to check the activity on cancer cells. Probably, this was conjugated with CRISPR technique which gave significant results. Another unique molecule RNASEH2 when reduces in absence ATR kinase induces DNA damage, apoptosis and senescence. This review juxtaposed the anticancer effects in mammalian and mouse cells and indicated ATR to be important molecule in diagnosis of cancer.

### Speaker Publications:

1. F.D. Urnov, E.J. Rebar, M.C. Holmes, H.S. Zhang, P.D. Gregory  
Genome editing with engineered zinc finger nucleases  
Nat. Rev. Genet., 11 (2010), pp. 636-646, 10.1038/nrg2842  
CrossRefView Record in ScopusGoogle Scholar
2. L. Cong, F.A. Ran, D. Cox, S. Lin, R. Barretto, N. Habib, P.D. Hsu, X. Wu, W. Jiang, L.A. Marraffini, F. Zhang  
Multiplex genome engineering using CRISPR/Cas systems  
Science., 339 (2013), pp. 819-823, 10.1126/science.1231143  
CrossRefView Record in ScopusGoogle Scholar
3. P. Mali, L. Yang, K.M. Esvelt, J. Aach, M. Guell, J.E. DiCarlo, J.E. Norville, G.M. Church RNA-guided human genome engineering via Cas9 Science., 339 (2013), pp. 823-826  
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3712628&tool=pmcentrez&rendertype=abstract>

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### Biography

I am 21 year old student in the field of Biotechnology. I am studying in final year of Masters of Biotechnology. I've worked on review paper that talks about prestin protein interaction in outer hair cells that is verge of publication in Advances of Bioresearch journal. I working as a project trainee in National Environmental Engineering Research institute and working on gutta percha effect on root canal.