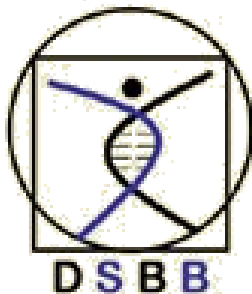


Exo1 involvement in response to UV irradiation

**Michele Giannattasio*, Fabio Puddu*, H  l  ne Tourri  re*, Philippe Pasero*, Paolo Plevani*
& Marco Muzi-Falconi***

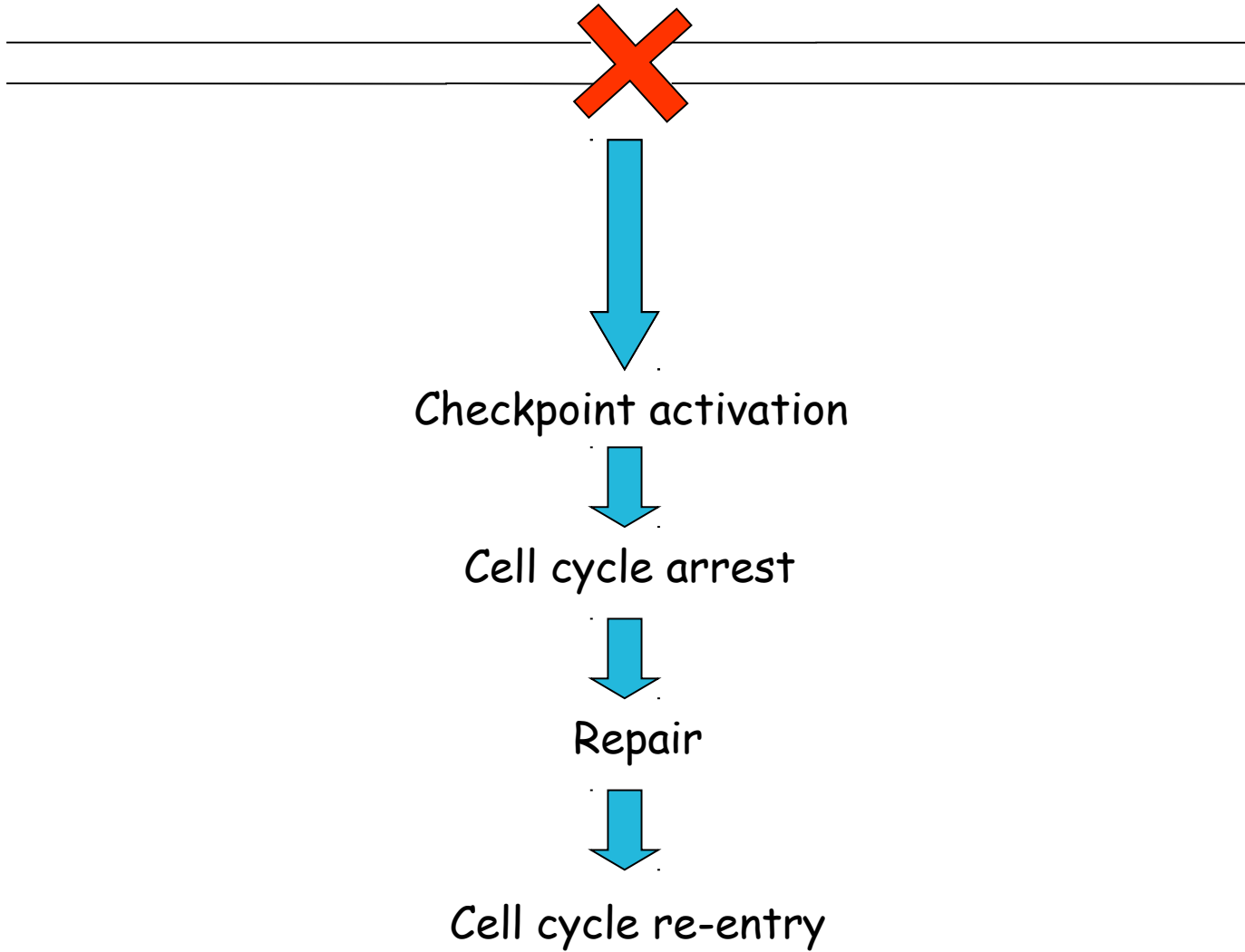


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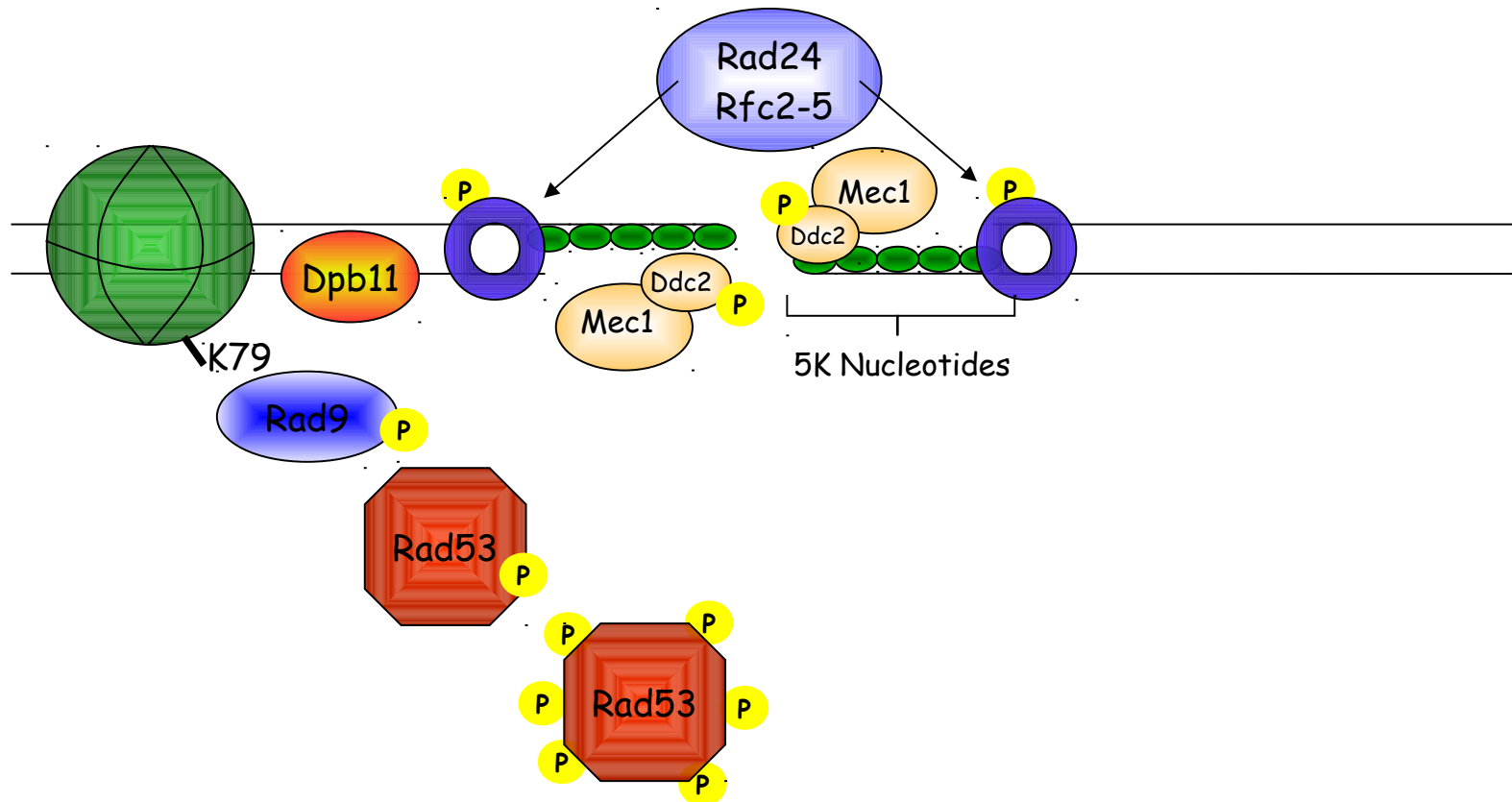


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Dna damage checkpoint



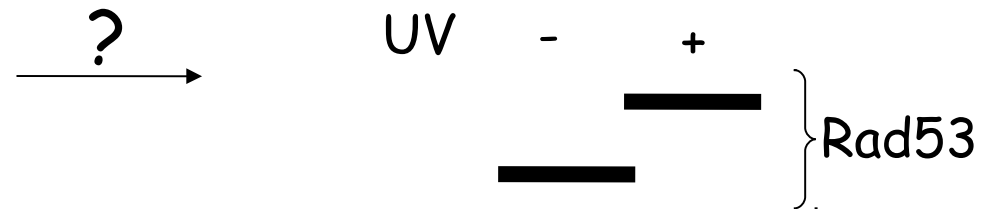
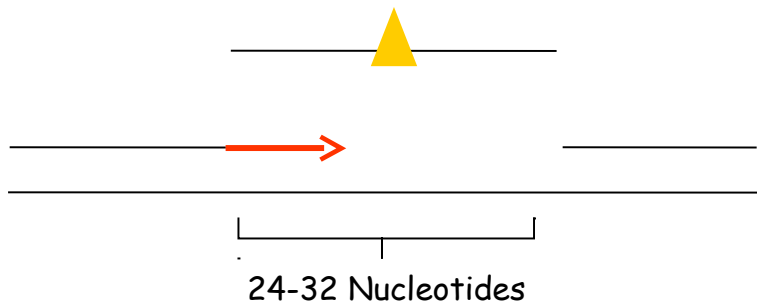
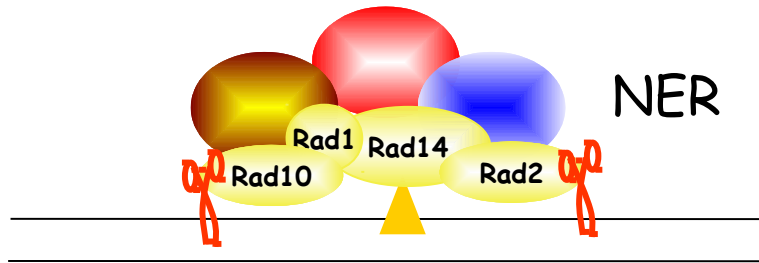
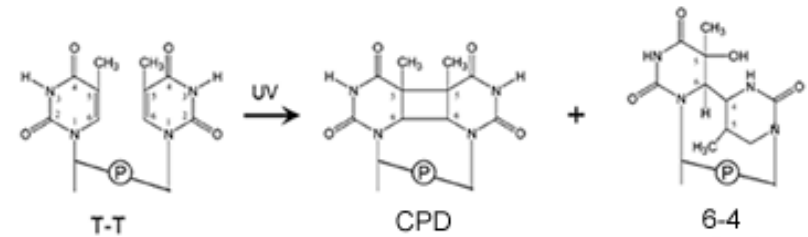
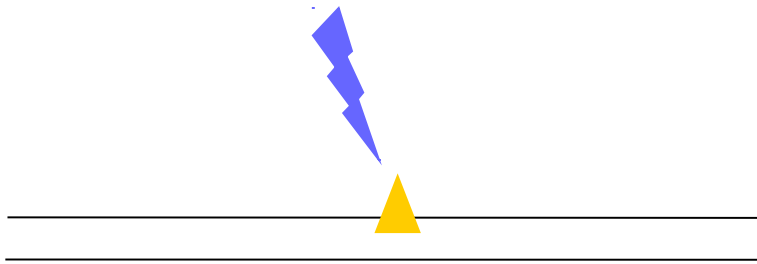
Dna damage checkpoint



● RPA

•  PCNA-like

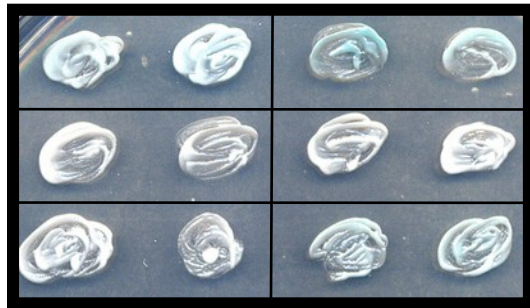
UV Damage, repair 6 checkpoint



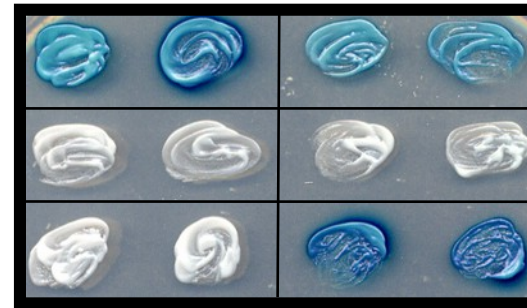
Exo1 interacts by two-hybrid with Ddc1 and Mec3



Raffinose



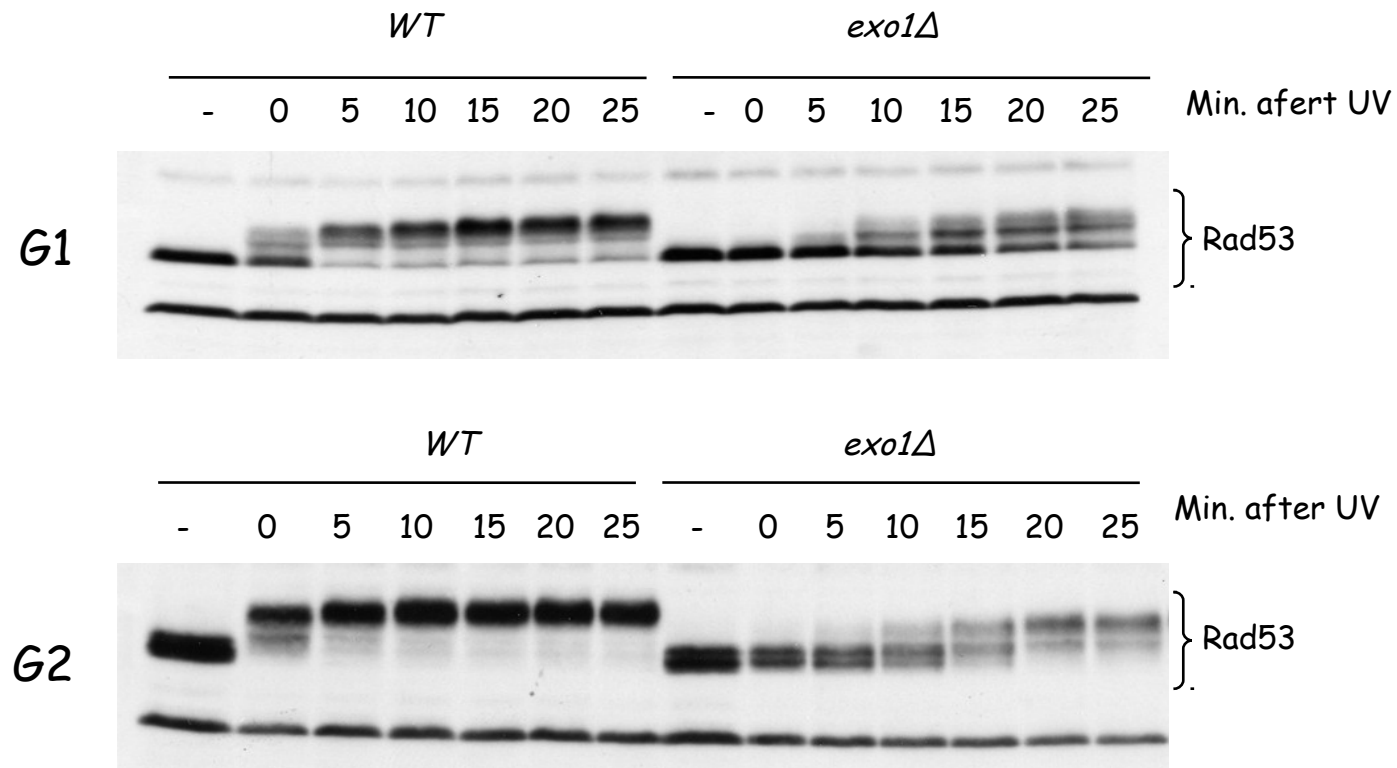
Galactose



Ddc1-Exo1	Mec3-Exo1
Ddc1-Vector	Mec3-Vector
Vector-Exo1	Ddc1-Rad14

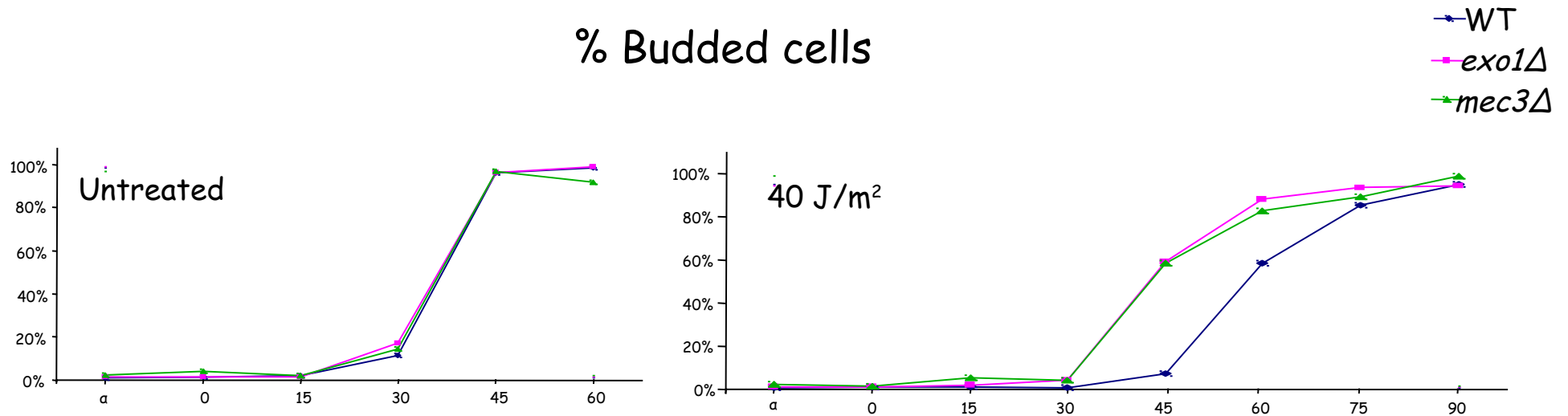


Exo1 is required for rapid checkpoint activation after UV irradiation

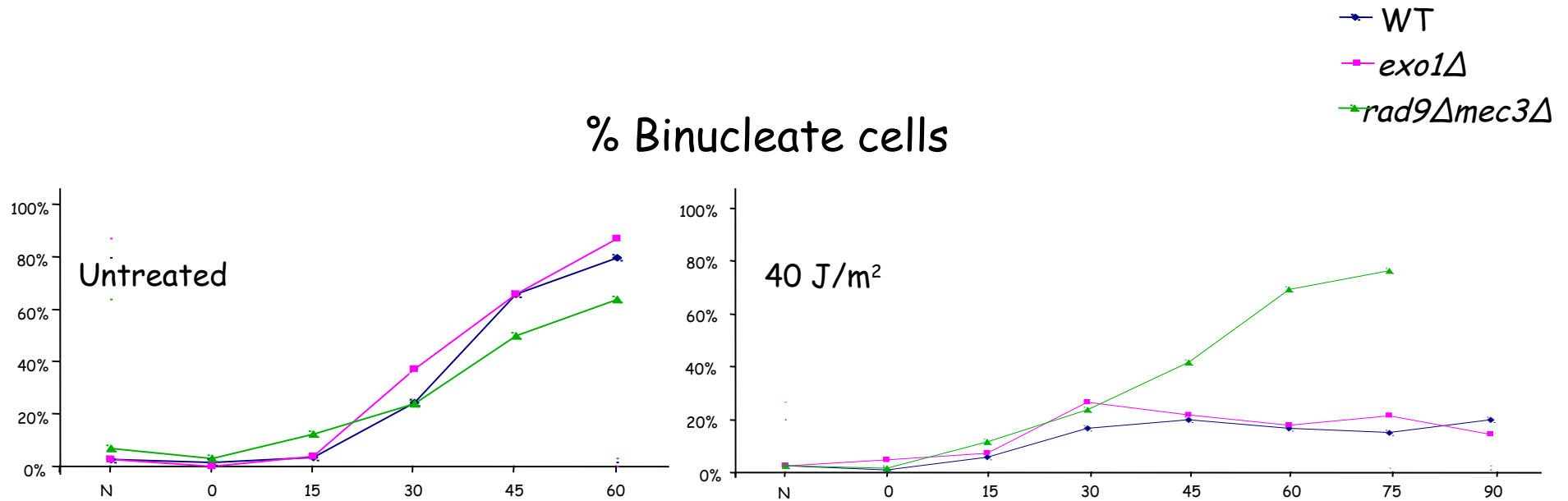


Yeast *exo1* Δ strains are defective in G1/S but proficient in the G2/M checkpoint

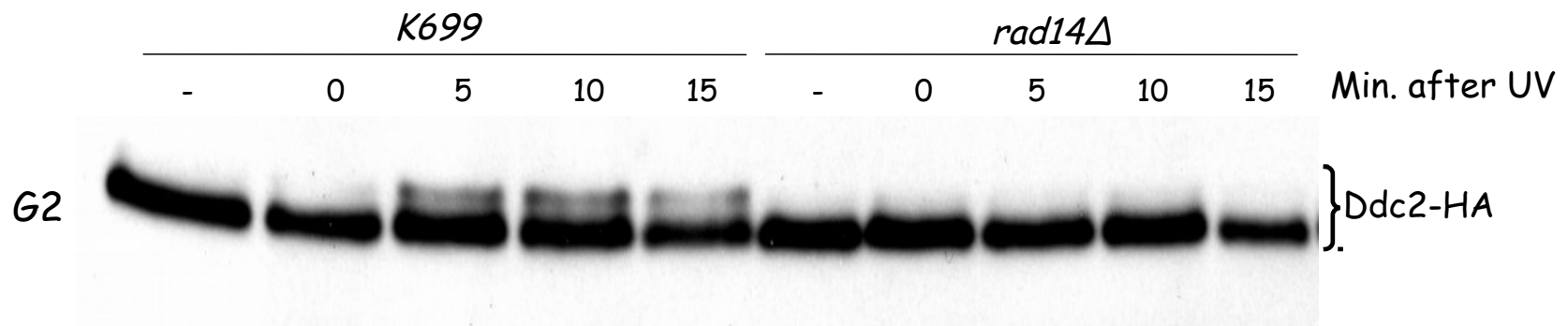
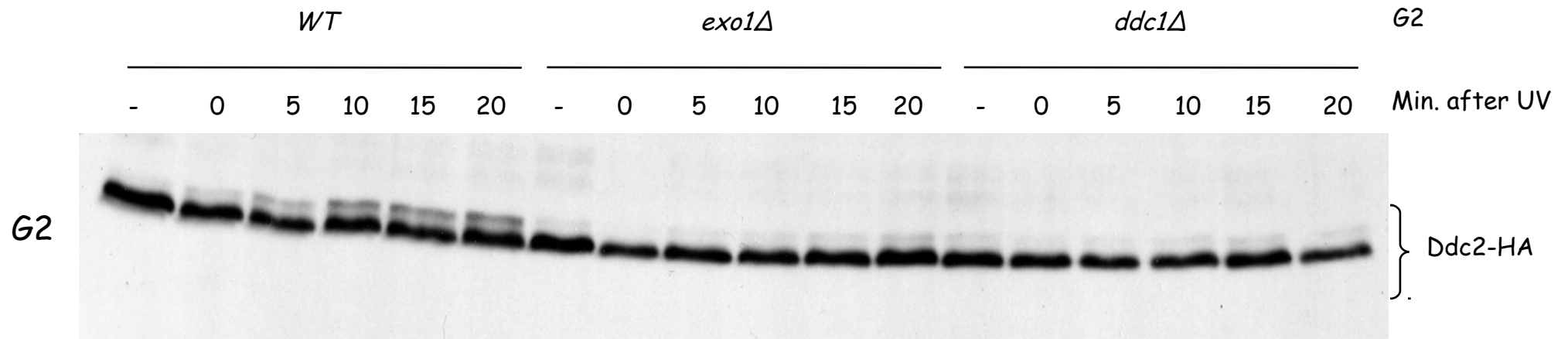
% Budded cells



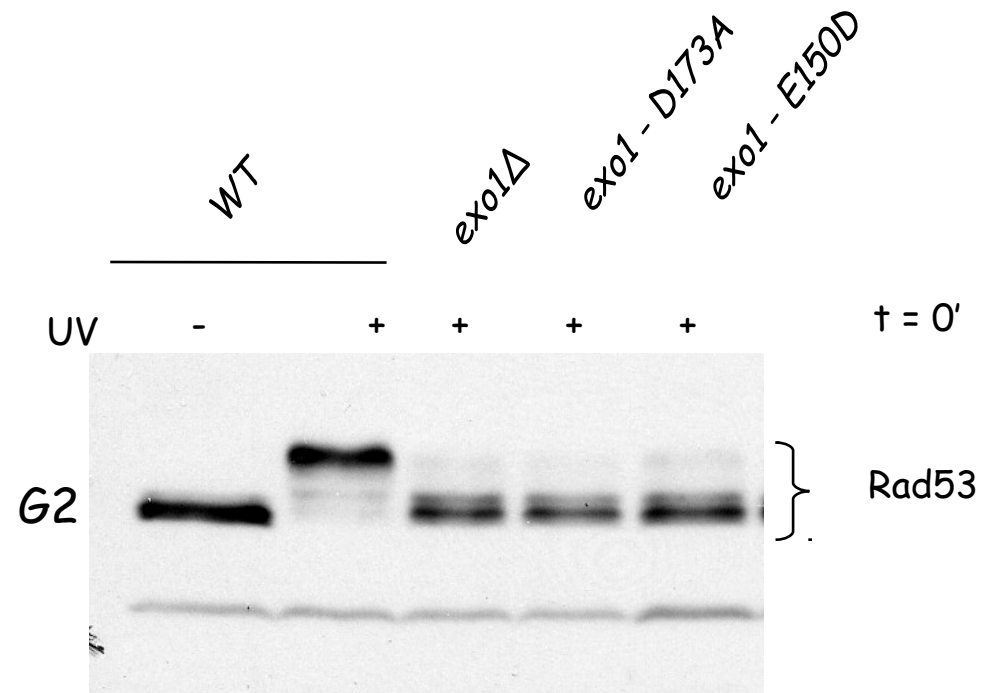
% Binucleate cells



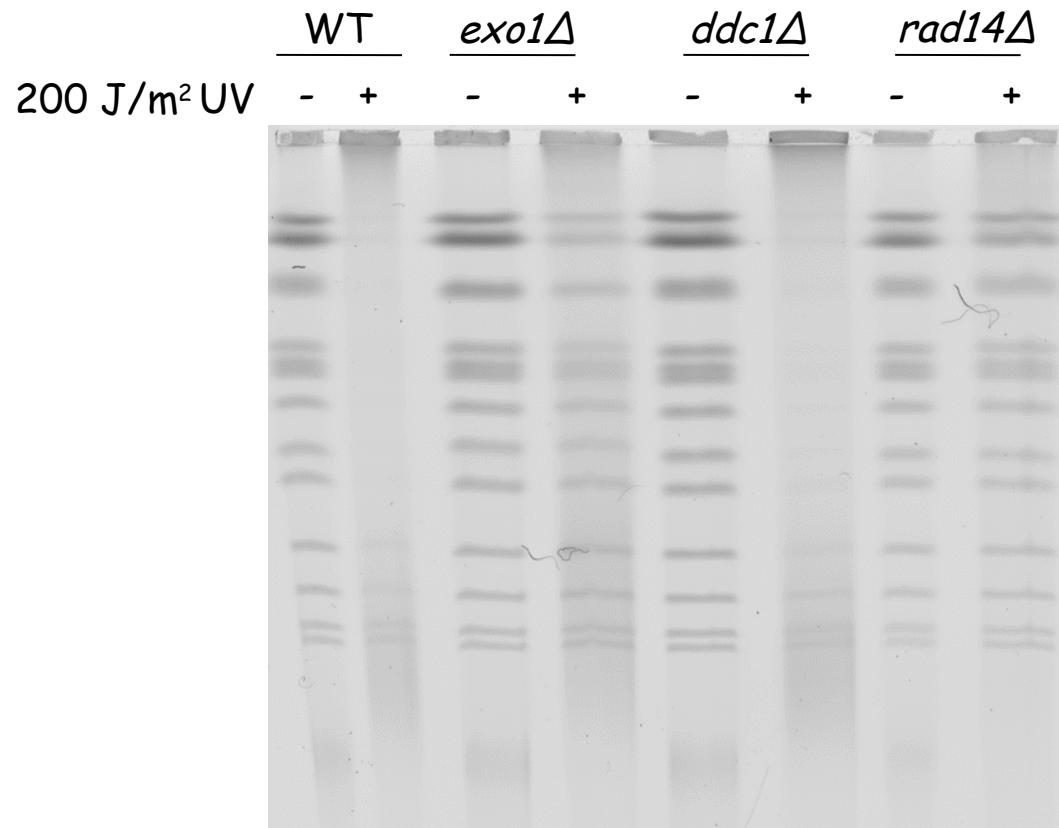
Exo1 & Ddc1 exerts their function upstream of Mec1 as Rad14 does



Exo1 function in checkpoint activation is dependent upon its nuclease activity

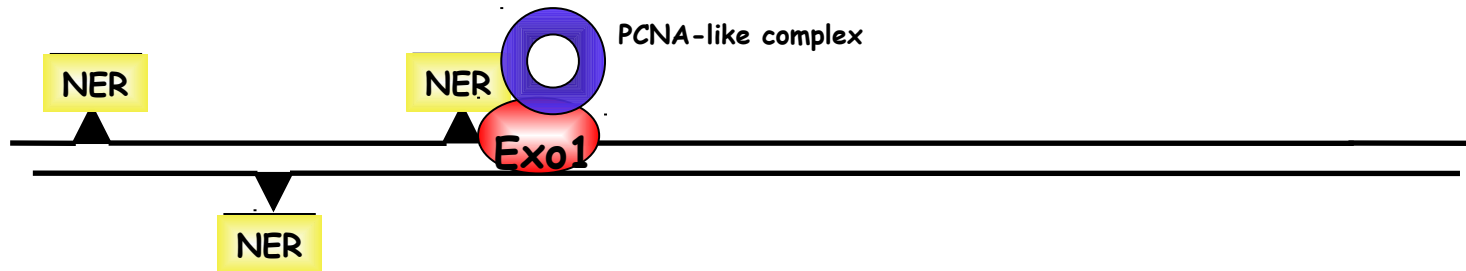


Chromosome processing after UV irradiation depends upon Rad14, Exo1 but not Ddc

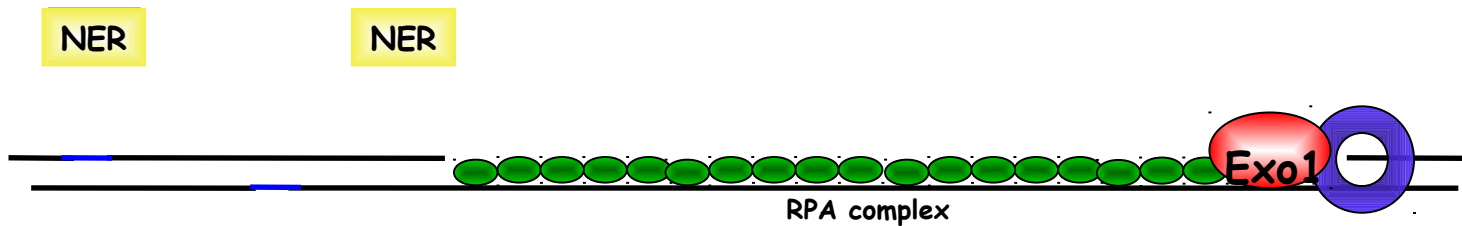


Checkpoint activation after UV: a possible model

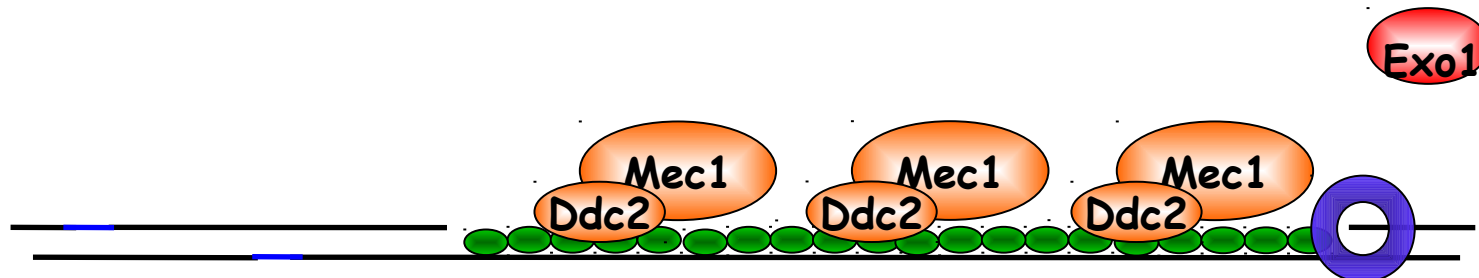
NER dependent lesion recognition & processing



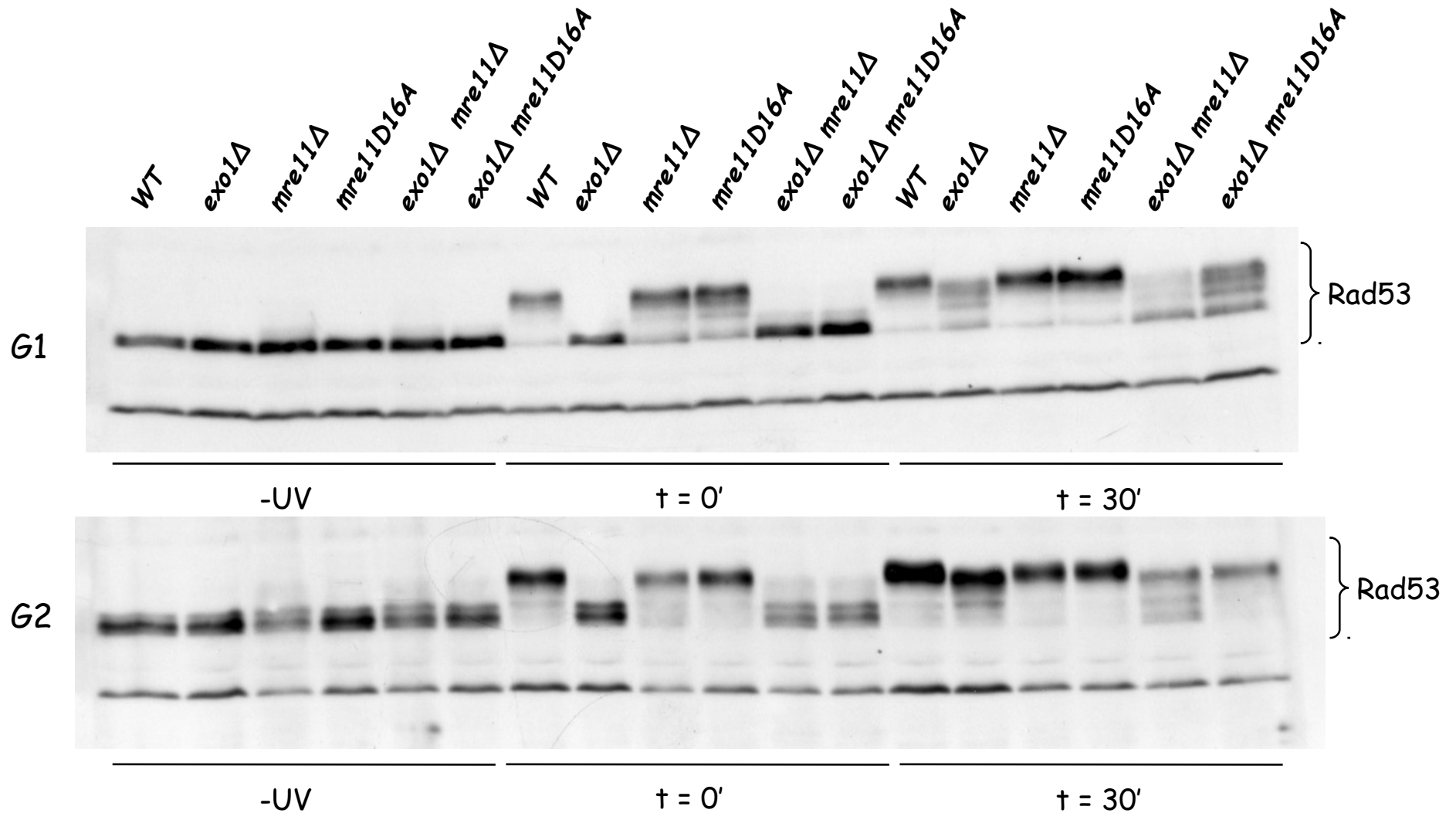
Exo1 resection & loading of the PCNA-like complex



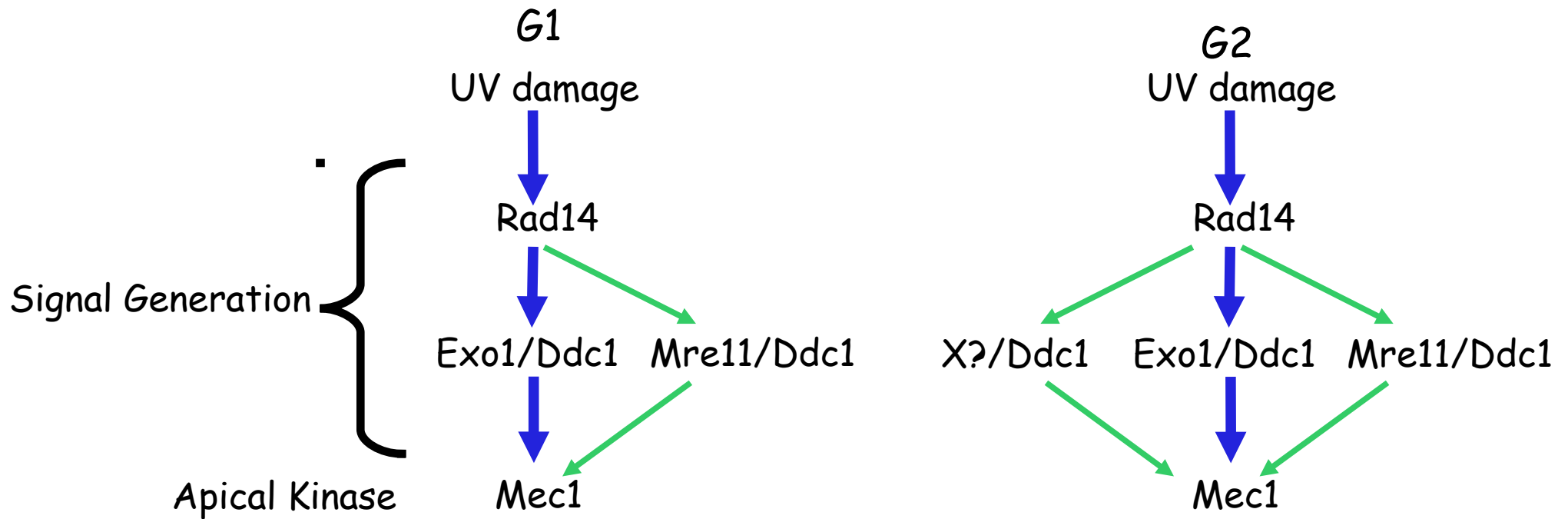
Exo1-dependent loading of Mec1-Ddc1 & Ddc1-dependent Mec1 activation



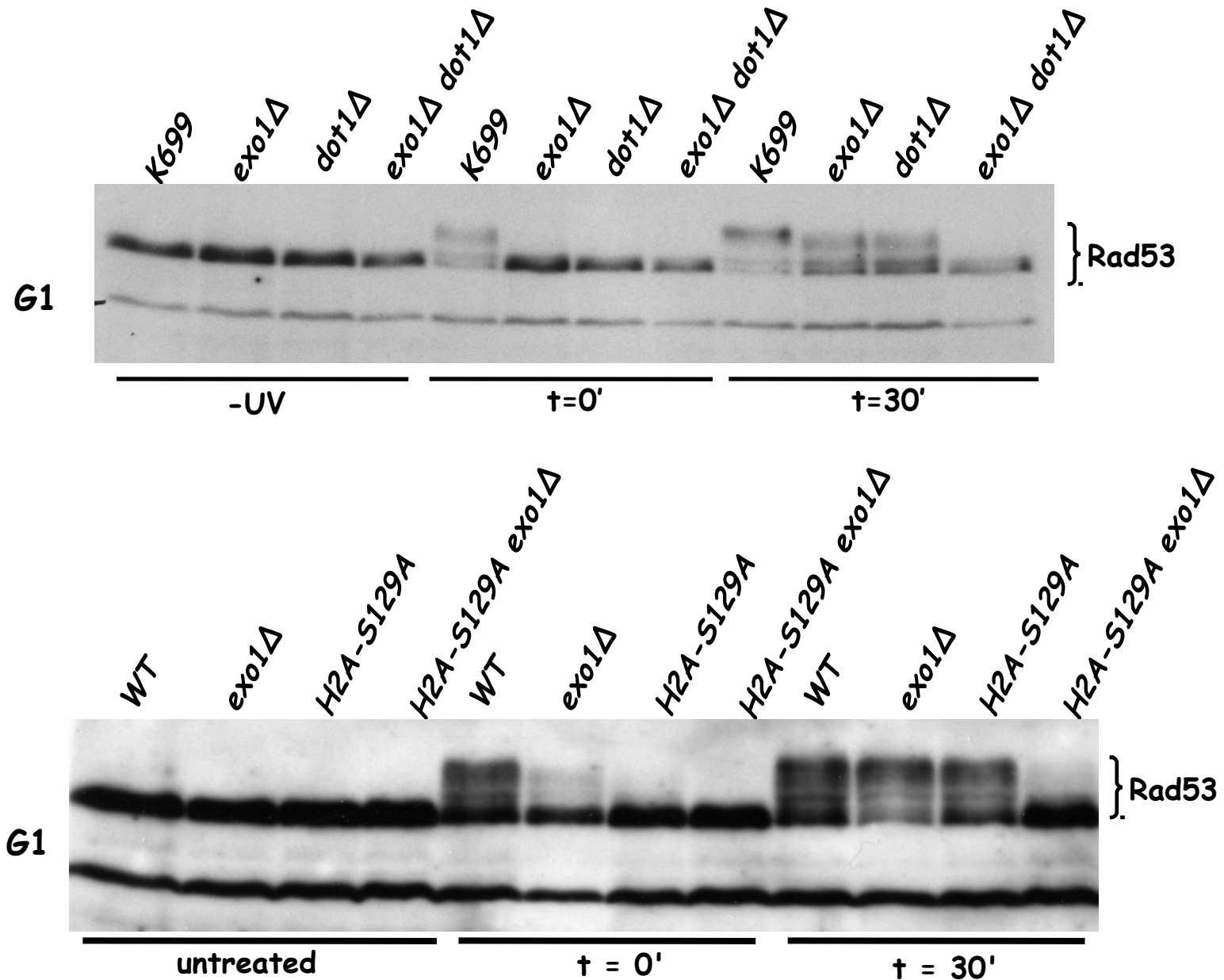
Rad53 phosphorylation in absence of Exo1 depends totally upon Mre11 in G1 but only partially in G2



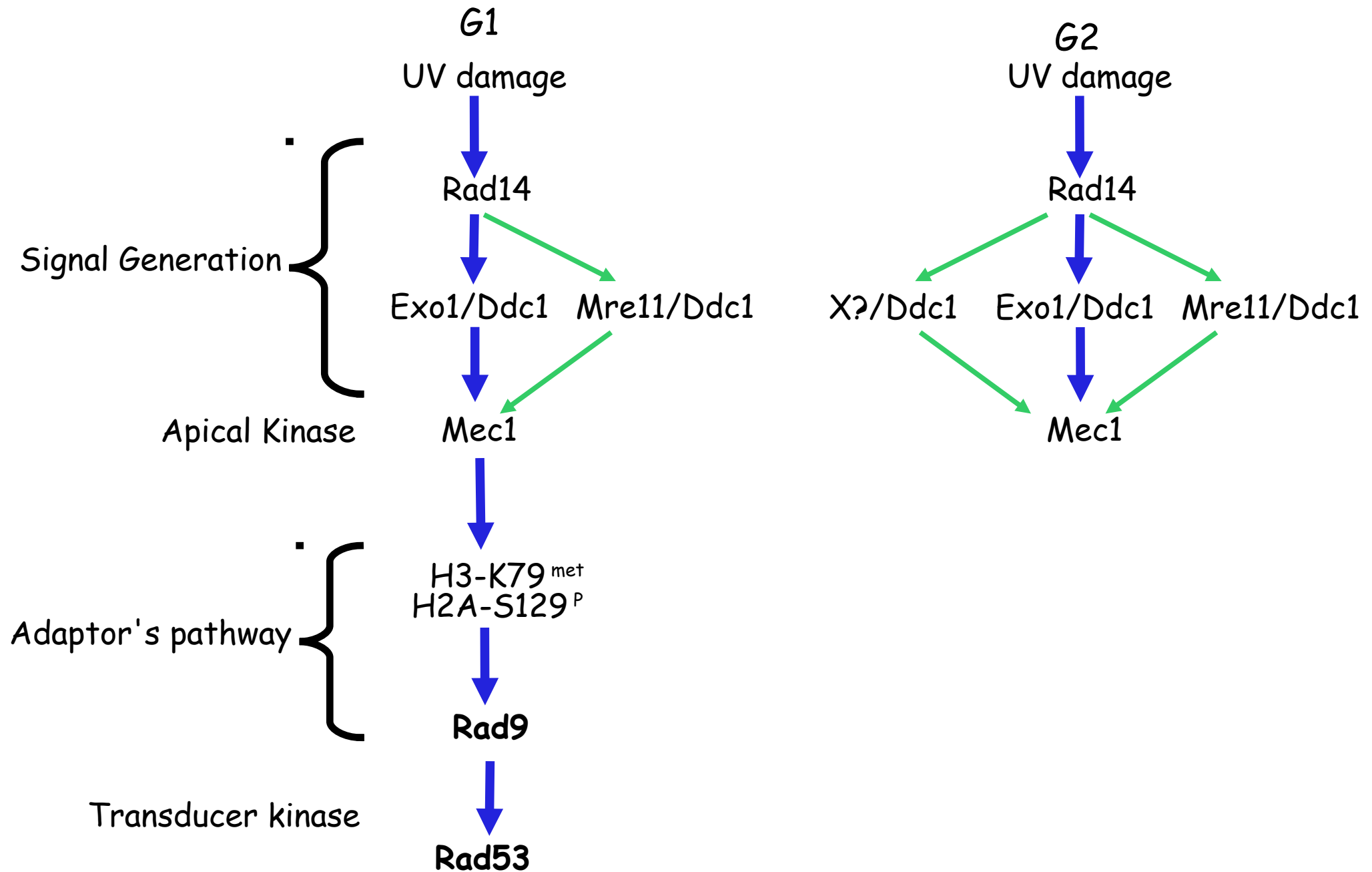
Model for Rad53 activation after UV



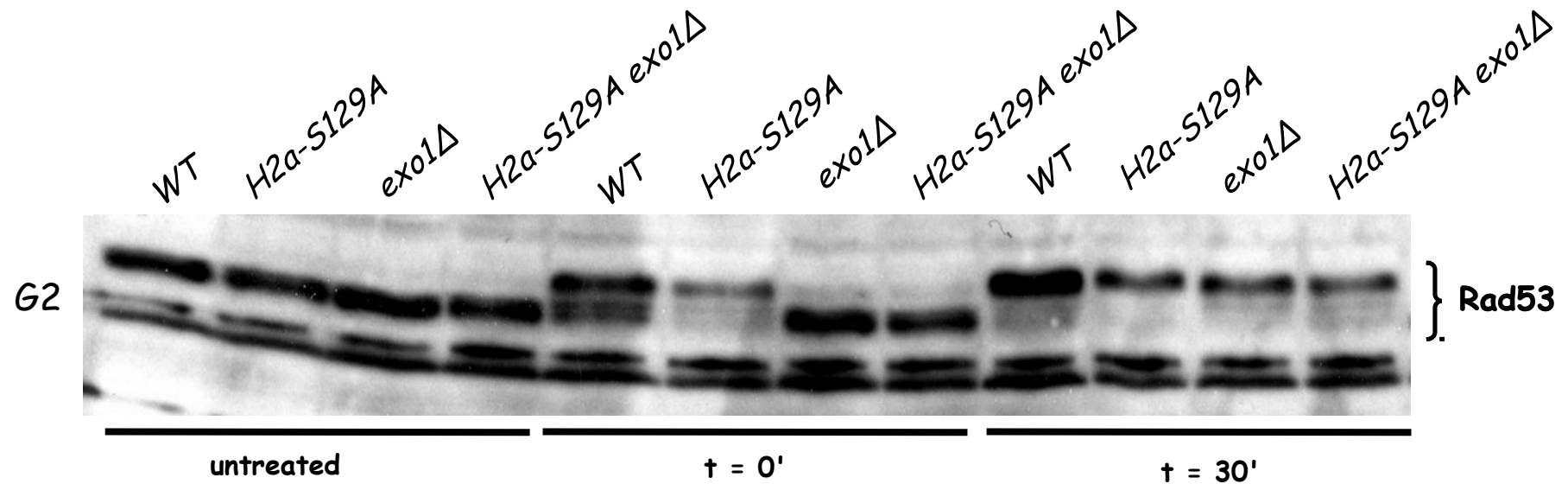
Rad53 phosphorylation in absence of Exo1
depends on both H3-K79^{met} and H2A-S129 in G1



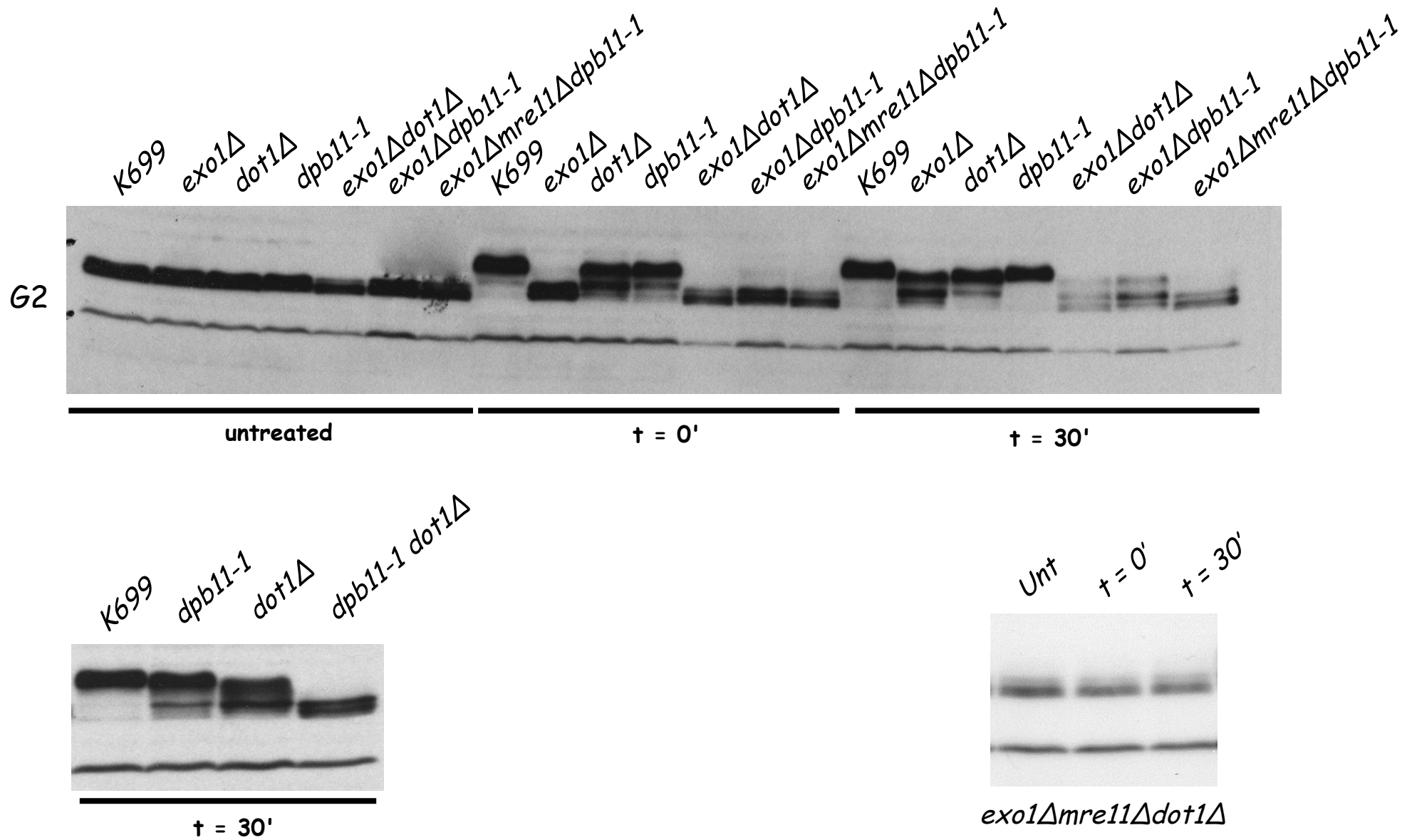
Model for Rad53 activation after UV



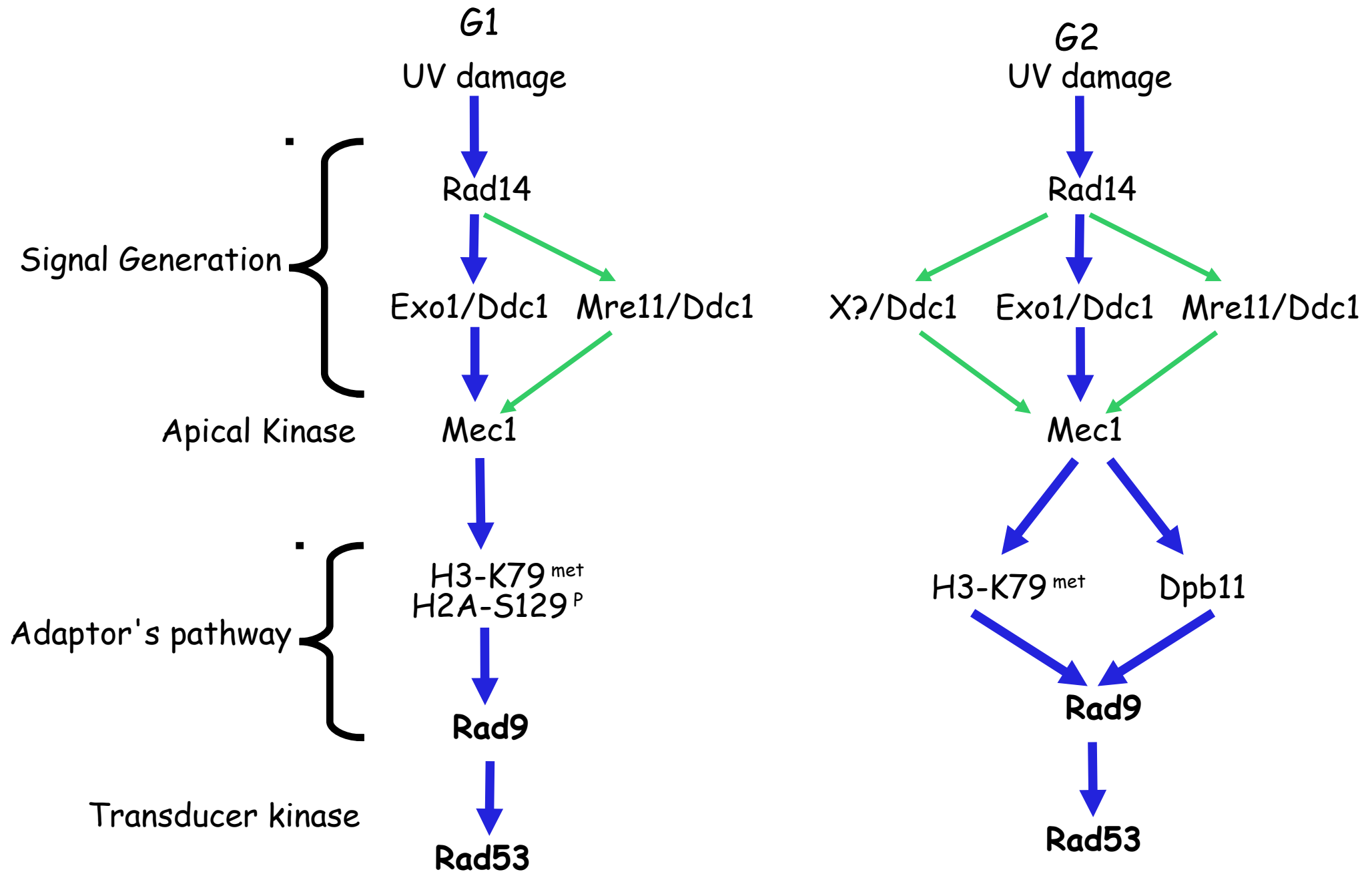
Rad53 phosphorylation in absence of Exo1 does not depend on H2A-S129 in G2



Rad53 phosphorylation in G2 depends on both H3-K79 methylation and Dpb11



Model for Rad53 activation after UV



Thanks to...

...Michele...

...all the people in the lab

