**SupPorting MATERIAL AND METHODS**

Immunostaining was performed as described for γ-H2AX. Rabbit polyclonal antibody against 53BP1 (NB100-305) was purchased from Novus Biologicals, rabbit polyclonal antibody against Myf-5 was purchased from Santa Cruz Biotechnologies (SC-302) and antibody to MyoD (ab3106, mouse monoclonal) was purchased from Abcam. MyoD and Myf-5 were incubated overnight at 4ºC. Fluorophore-conjugated secondary antibodies (Alexa Fluor) were purchased from Invitrogen.