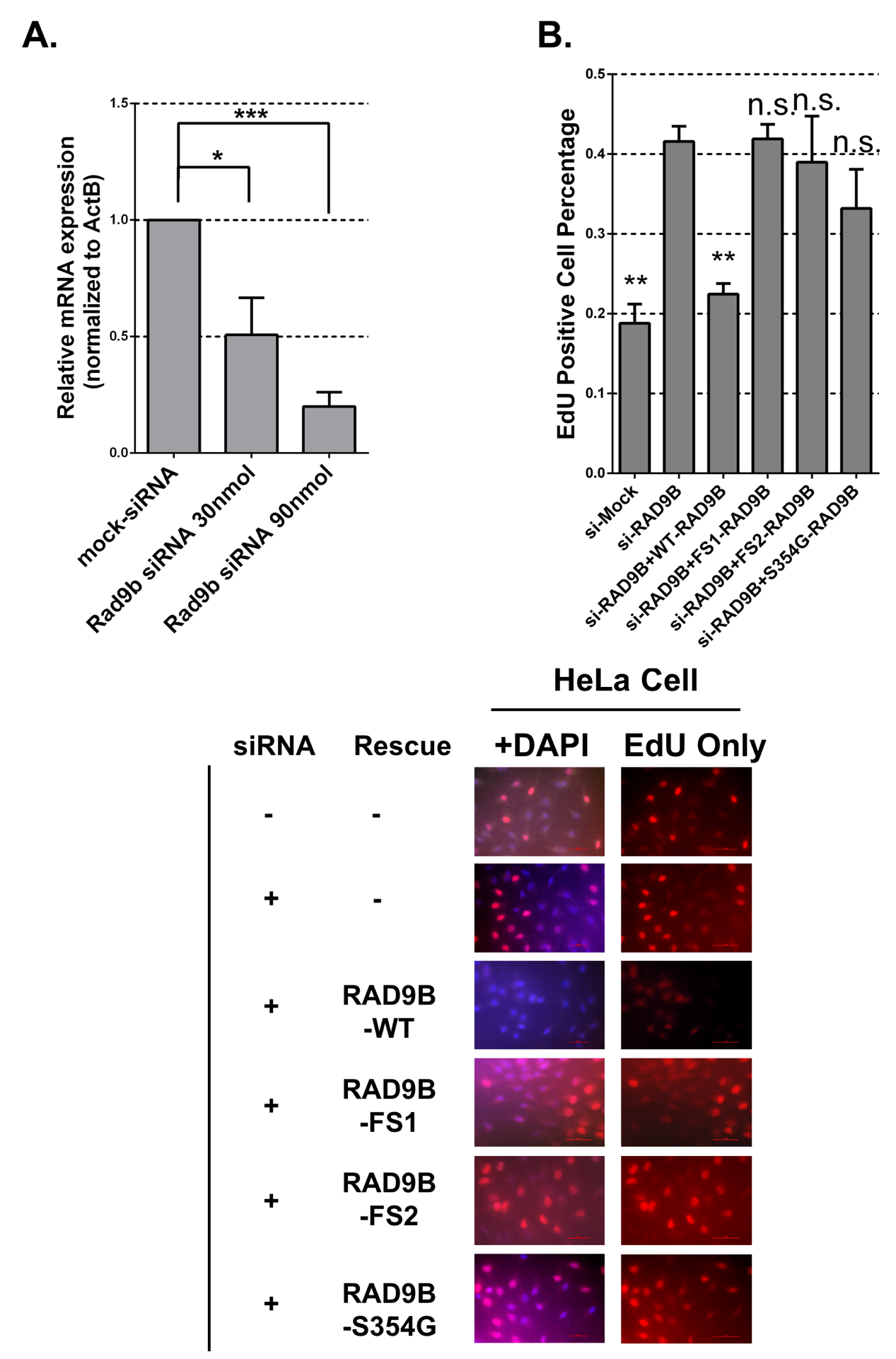
**Sfigure1**

Fig. 1A. qRT-PCR results on detecting the knockdown efficiency of the pre-designed siRNA pool (1x = 30 pmol totally per 6-cm dish); mock-siRNA represents the si-Scrambled; Error bars represent ± SD for triplicate experiments. \*: p <0.05; \*\*\*: p < 0.001

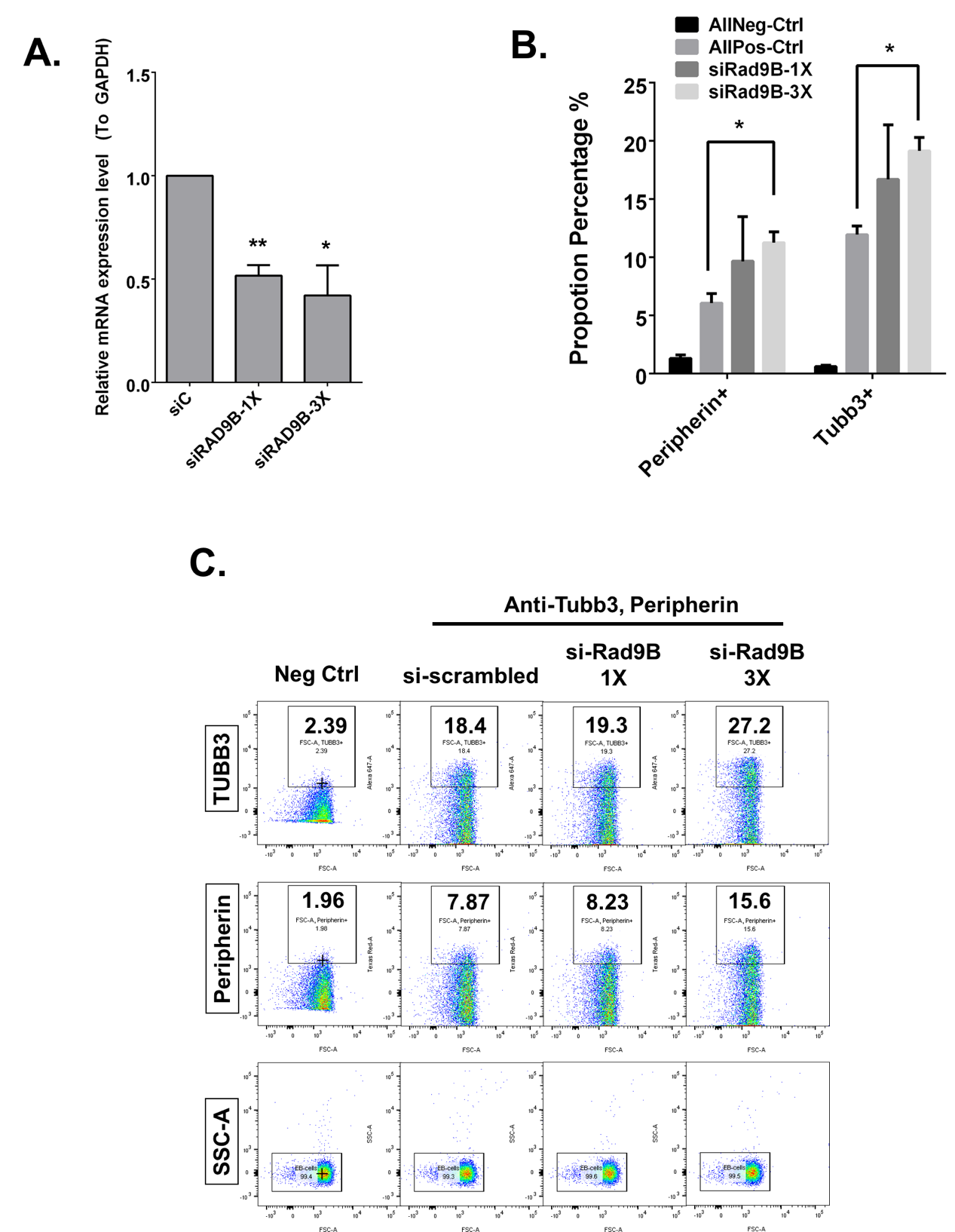
Fig. 1B. Quantification of EdU-positive cell numbers after 12-hour EdU incubation with indicated treatments. siRNA treatment concentration is 90 pmol per 6-cm dish. Student’s t test was performed on indicated treatment groups. Error bars represent ± SD for triplicate experiments.



**Sfigure2:**

Fig. 2A. Rad9B siRNA knockdown efficiency in hESC cells. 1X = 15 pmol per 6-well dish.

Fig. 2B, C. Loss of *Rad9B* and abnormally accelerated neuroectoderm differentiation. Flow data for siRad9B treated ES cells, displaying TUBB3 positive and Peripherin positive cell population. TUBB3: anti-TUBB3; Peripherin: anti-Peripherin. \*: p < 0.05. Chi-square test on si-Scrambled versus si-3X for two markers all show significant difference: two-tailed p < 0.0001.

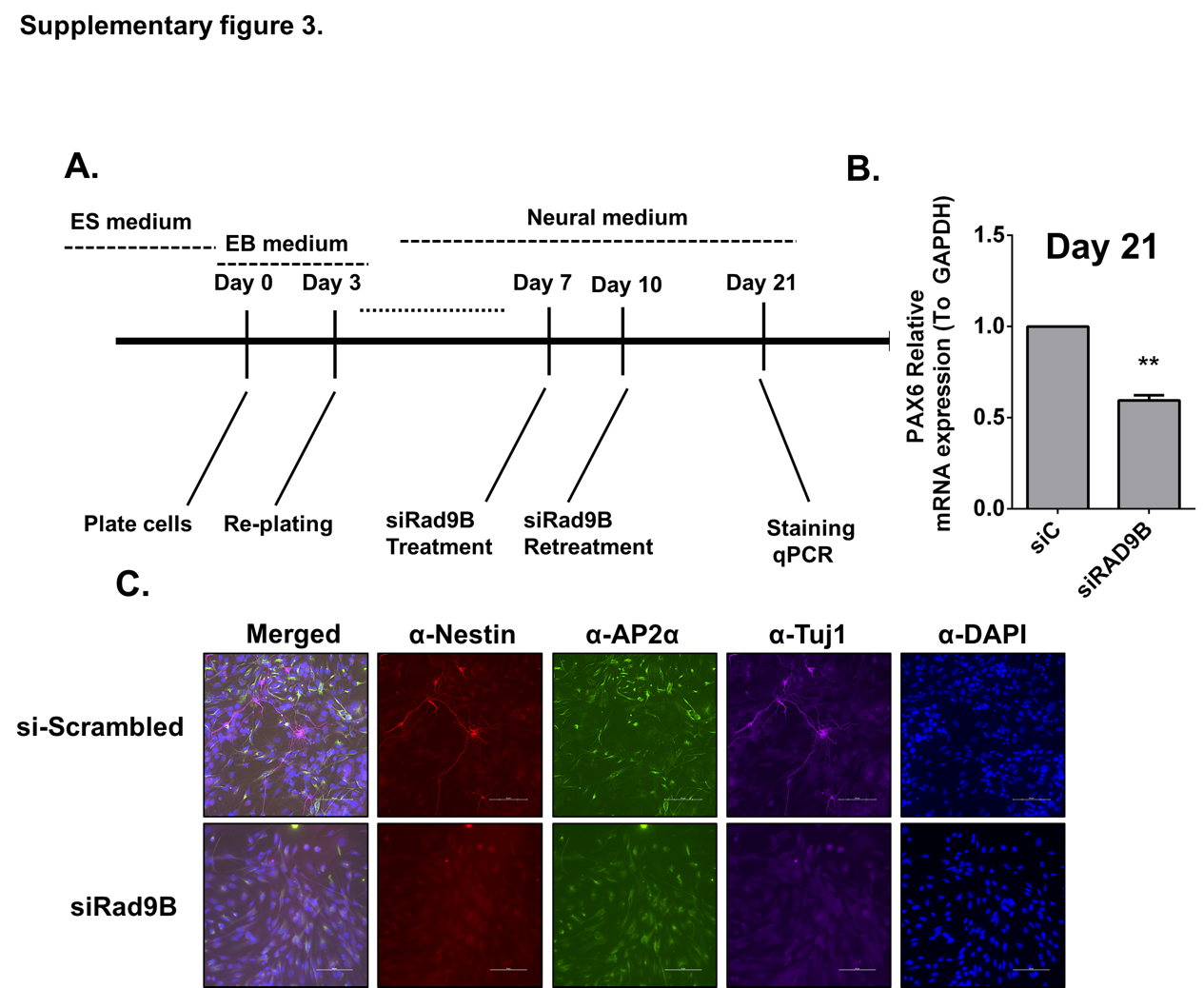


**Sfigure3**

Fig. 3A. Loss of *Rad9B* impairs neural stem cell population establishment. Scheme for neural cell and neural stem cell culture and staining experiments.

Fig. 3B. Day 21 Pax mRNA qPCR results. \*\* p < 0.01

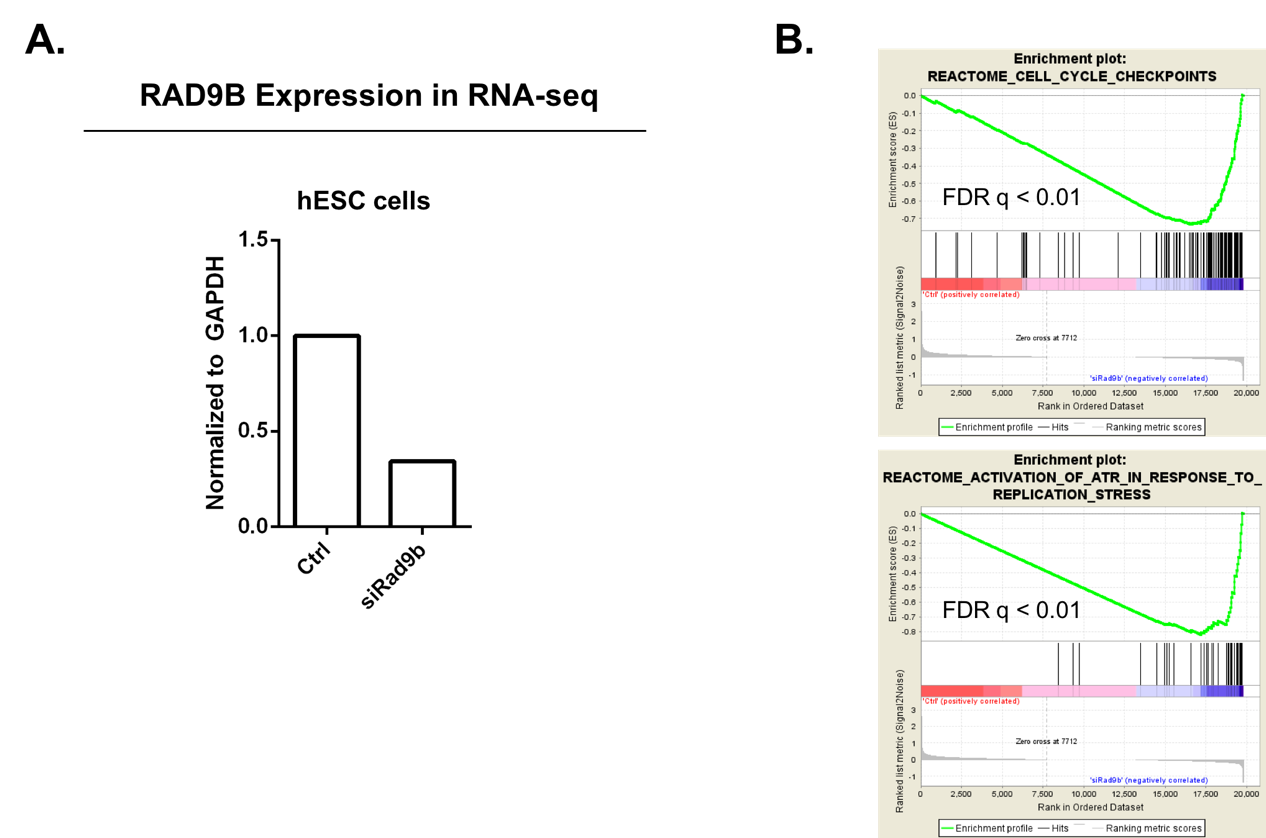
Fig. 3C. Immunofluorescent assay showed siRad9B treatment impaired ‘axon-like’ structure formation. Scale bar = 50 µm; Tuj1: marker for neuron-specific Class III β-tubulin. DAPI: nuclei marker. siRad9B treatment amount = 45 pmol per 6-well dish culture. Two parallel experiments are performed; each experiment has triplicate wells for staining.



**Sfigure4**

Fig. 4A. RAD9B mRNA level detected in RNA-seq.

Fig. 4B. Gene set enrichment analysis for mostly enriched gene sets plotted by enrichment of gene expression in siRAD9B transfected cells compared with si-Control-treated cells.



**Stable1 *RAD9B* PCR and Sequencing Primer list**

|  |  |  |
| --- | --- | --- |
| **Sequence Name** | **Bases** | **Sequence** |
| rad9b-exon1-f | 21 | GAG GGA GAC AGA AAT TGC CGT |
| rad9b-exon1-r | 20 | CCG CTC CAC CTT TCA CCT GA |
| rad9b-exon3-f | 20 | GGC TTC CAT CCA TCC TCC TG |
| rad9b-exon3-r | 33 | GCC ATT TAA ACT ATT AAG TAT AGA ATA CAG GTT |
| rad9b-exon4-f | 31 | TCA ACC ATG TTA AGT ATG TGC TTA ATA TGT A |
| rad9b-exon4-r | 32 | GTA ACG AGA AAT CTT GAC ATG AAA TAT CAA TG |
| rad9b-exon5-f | 34 | TAT TAC TTT AAT TTG GCT GTG AAA CTT AAA GAC T |
| rad9b-exon5-r | 25 | GAA AAG CTC TAG GGC ATT GAT TCT T |
| rad9b-exon6-f | 29 | TTG AGT CCC AGT TAA TAA GGT ATG TCT TT |
| rad9b-exon6-r | 31 | TTA TGT CAC TAA TAT TTG CAG TAT GGT TAG T |
| rad9b-exon78-f | 21 | GGA AAT GGG ATG GGA TTT GGG |
| rad9b-exon78-r | 30 | AGG TAT TCC TGA GGT GTT AAT TAA TTT CAA |
| rad9b-exon9-f | 25 | CAT CAG AAA ATG AGT GTC ACT GTT G |
| rad9b-exon9-r | 26 | GGT GAT GTT TCT ATG CTA CAG GTA AG |
| rad9b-exon10-f | 32 | CCA TGT ATT TCA ATA TAT TCC CTA ATC CAG TG |
| rad9b-exon10-r | 20 | GGA TTG GGG AGG AAG ACT GC |
| rad9b-exon11-f | 23 | TTG GAA TCA ACA ATG CAG TTC CT |
| rad9b-exon11-r | 30 | CAT AAT GGA TTT AAA GCA AGT TAC ATA CAC |
| rad9b-exon12-f | 28 | CCT CAA ATT GTT CTG ATT TTC AGA TGT G |
| rad9b-exon12-r | 25 | CTC ATT ACT AAG CTA CAA GAG CCA A |
| rad9B-exon2-f | 27 | GGG AAA GAA TAT AAG CAT CAC CTT TCT |
| rad9B-exon2-r | 28 | CCA TGC TCT AAG TGT ATT CAG ATA TGT A |

**Stable2 Summary table of submission on ClinVar**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**Submission ID**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Submission name**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Accession**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Status**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Submitter name**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Reports**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Release date**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Created date**](https://submit.ncbi.nlm.nih.gov/clinvar/) | [**Action**](https://submit.ncbi.nlm.nih.gov/clinvar/) |
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