

**E-Suppl. Fig. 1.** Assessment of live and dead cell percentage based on trypan blue exclusion assay. The data presented in mean ± SD of three independent experiments. Significances were indicated in \* at *p < 0.05* compared to control.

**E-Suppl. Fig. 2**. Measurement of ROS level by DCFDA staining in MCF-7 cells. Quantification of fluorescent intensity was processed in ImageJ software and presented in percentage. Data presented in mean ± SD of triplicate groups. The asterisk (\*) denotes the statistical significance at *p < 0.05* compared to the control.





**E-Suppl. Fig. 3.** Measurement of mitochondrial membrane potential level by rhodamine 123 staining. Quantification of fluorescent intensity was processed in ImageJ software and presented in percentage. Data presented in mean ± SD of triplicate groups. The asterisk (\*) denotes the statistical significance at *p < 0.05* compared to the control.

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| Bcl-2 | Ser-116, Leu-119, Gly-166, His-120, Arg-15, Arg-164, Asp-14, Val-113, Lys-12, Thr-11, Arg-183, Pro-10, Asp-9, Thr-122, Pro-123, Trp-176, Arg-127, Asn-172, Ala-126, Gly-7, Ser-6, Phe-123, Phe-5, Leu-169, Pro-123, Asn-172, Gly-172, Gly-2, Gly-1, Ala-4, Gly-3 |
| BAX | Gly-1, Gly-2, Gly-3, Ala-4, Phe-5, Ser-6, Trp-139, Arg-89, Gly-7, Lys-8, Phe-93, Asp-9, Arg-147, Pro-10, Thr-11, Lys-12, Asp-98, Val-13, Asp-14, Arg-15. |
| Caspase-3 | Gly-1, Gly-2, Gly-3, Glu-824, Tyr-331, Tyr-829, Tyr-831, Val-390, Ala-4, Phe-5, Val-390, Pro-835, Ser-6, Arg-286, Tyr-329, Glu-240, Arg-286, Glu-239, Ile-242, Thr-111, Pro-13, Asp-14, Arg-15, Val-13. |
| Caspase-9 | Arg-15, Arg-173, Val-13, Arg-178, Thr-179, Thr-11, Pro-10, Thr-18, Asp-9, Pro-357, Arg-355, Lys-8, Gly-7, Ser-6, Phe-345, Phe-5, Gly-395, Ala-4, Gly-3, Gly-2, Gly-1, Lys-398. |

**E-Suppl. Table 1.** Amino acid interactions of GR15 with the anticancer protein receptors visualized in the discovery studio software