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# siRNA - mediated LRP/LR knock-down reduces cellular viability of malignant melanoma cells through the activation of apoptotic caspases

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## Abstract

The 37kDa/67kDa laminin receptor (LRP/LR) is over-expressed in tumour cells and has been implicated in several tumourigenic processes such as metastasis and telomerase activation, however, more importantly the focus of the present study is on the maintenance of cellular viability and the evasion of apoptosis. The aim of the study was to investigate the role of LRP/LR on the cellular viability of early (A375) and late stage (A375SM) malignant melanoma cells. Flow cytometry and western blot analysis revealed that A375SM cells contain more cell-surface and total LRP/LR levels in comparison to the A375 cells, respectively. In order to determine the effect of LRP/LR on cell viability and apoptosis, LRP was down-regulated via siRNA technology. MTT assays revealed that LRP knock-down led to significant reductions in the viability of A375 and A375SM cells. Confocal microscopy indicated nuclear morphological changes suggestive of apoptotic induction in both cell lines and Annexin-V FITC/PI assays confirmed this observation. Additionally, caspase-3 activity assays revealed that apoptosis was induced in both cell lines after siRNA-mediated down-regulation of LRP. Caspase-8 and -9 activity assays suggested that post LRP knock-down; A375 cells undergo apoptosis solely via the extrinsic pathway, while A375SM cells undergo apoptosis via the intrinsic pathway.

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