



Molecular Biotechnology Programme
Uppsala University School of Engineering

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Author	Emma Håkansson	
Title (English)	Effects of low dose-rate radiation on the growth of tumour cells	
Title (Swedish)		
Abstract	<p>In targeted radiotherapy, dose-rates are lower than in external radiotherapy. Therefore, it is important to study the effects of low dose-rate radiation on tumour cells. The theory is that cells showing hypersensitivity to low doses also could be unusually sensitive to low dose-rates. Tumour cell lines were irradiated with low dose-rates and acute doses and deviation from normal growth was studied. The colorectal adenocarcinoma cell line HT29, reported to be hypersensitive, showed an indication of inverse dose-rate effect to irradiation with 0.084 Gy/h. Reported to be hyper sensitive is also glioblastoma astrocytoma cell line U118 MG, but it showed no inverse dose-rate effect in this study. At last, the glioblastoma astrocytoma cell line U373 MG showed an inverse dose-rate effect to a dose-rate of 0.12 Gy/h compared to acute doses, even though it was reported not to be hypersensitive.</p>	
Keywords	Low dose-rate, hyper radiosensitivity, inverse dose-rate effect, radionuclide therapy, HT29, U118, U373	
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