

Table S1. Composition of culture media used in the optimization of culture conditions of HNSCC tumor slices. DMEM: Dulbecco modified Eagle's medium; FCS: fetal calf serum; P/S: penicillin and streptomycin; B27: B-27 supplement; EGF: epidermal growth factor; bFGF: basic fibroblast growth factor; aDMEM: advanced DMEM/F-12.

Medium	Composition
OC1	
No primocin	DMEM + 10% FCS + P/S DMEM + 10% FCS + P/S + B27 50x; EGF 20ng/ml; insulin 1:1000
Primocin	DMEM + 10% FCS + P/S + primocin DMEM + 10% FCS + P/S + B27 50x; EGF 20ng/ml; insulin 1:1000 + primocin
OC 2 - 8	
Medium 1	DMEM + 0.5% BSA + P/S + primocin
Medium 2	DMEM + 0.5% BSA + P/S + B27 50x; EGF 40ng/ml; insulin 1:1000 + primocin
Medium 3	DMEM + 10% FCS + P/S + primocin
Medium 4	DMEM + 10% FCS + P/S + B27 50x; EGF 40ng/ml; insulin 1:1000 + primocin
OC 7 - 14	
Medium 5	aDMEM + P/S + primocin
Medium 6	aDMEM + P/S + B27 50x; EGF 20ng/ml; bFGF 20ng/ml; insulin 1:1000 + primocin
Medium 7	aDMEM + P/S + EGF 20ng/ml; bFGF 20ng/ml + primocin

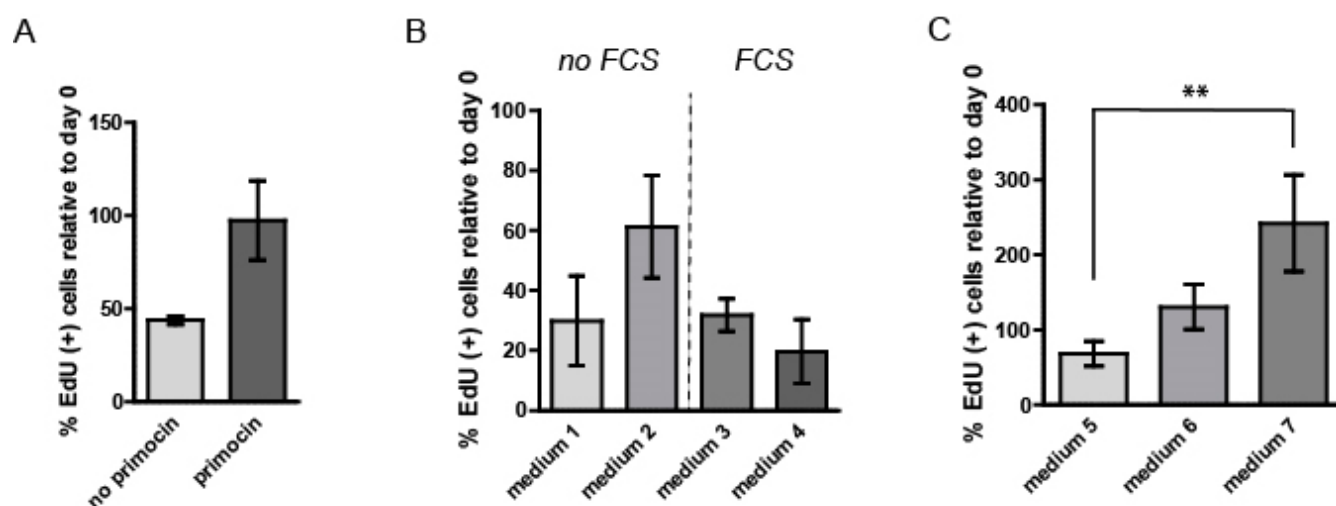


Figure S1. The effect of various culture media on the preservation of proliferation within HNSCC tumor slices during five days of culture. **(A)** Quantification of EdU positive cells in slices cultured in a medium with or without primocin. Bars show the mean of all slices (≥ 3) cultured in a given medium and error bars indicate SEM. **(B)** Quantification of EdU positive cells in slices cultured in a medium with or without FCS. Bars show the mean of all slices (≥ 3) cultured in a given medium and error bars indicate SEM. **(C)** Quantification of EdU positive cells in slices cultured in various aDMEM-based media. Bars show the mean of all slices (≥ 3) cultured in a given medium and error bars indicate SEM. The exact medium composition can be found in Table S1. t-test has been used to assess significance. ** $p < 0.001$.

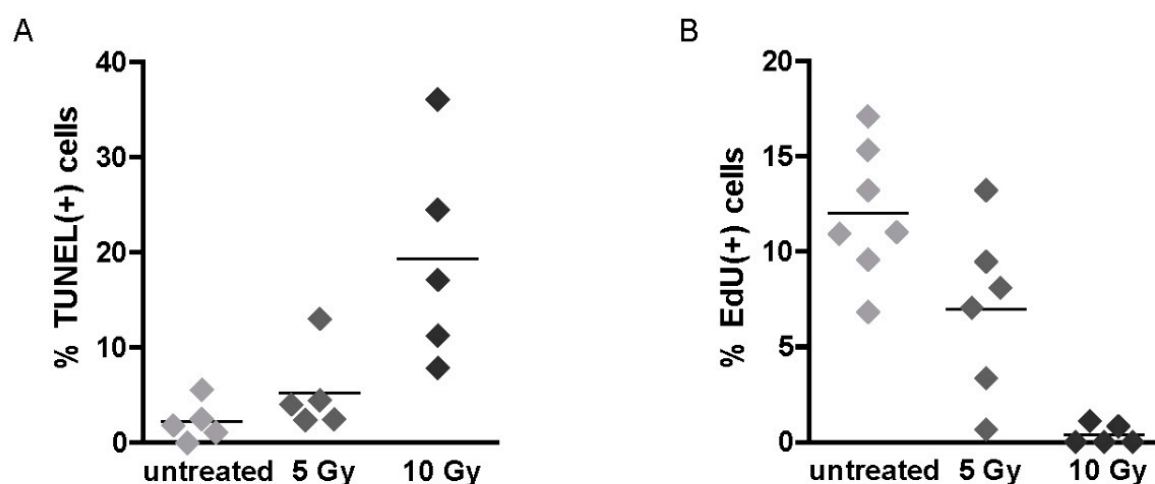


Figure S2. Irradiation with a single dose of 10 Gy induced marked apoptotic response and abolished proliferation in HNSCC tumor cells. **(A)** Quantification of TUNEL positive cells in untreated, and 5 Gy- or 10 Gy-treated samples at day 5 of the ex vivo culture. Each point represents the mean of ≥ 5 FoV per sample, and a mean across all samples per condition is indicated with a horizontal line. **(B)** Quantification of EdU positive cells in untreated, and 5 Gy- or 10 Gy-treated samples at day 5 of the ex vivo culture. Each point represents the mean of ≥ 5 FoV per sample, and a mean across all samples per condition is indicated with a horizontal line.