**Supplementary Figure Legends:**

Supplementary Figure 1:

Tumor growth delay of U87 orthotopic GBM implanted in the striatum of female Nude mice measured by contrast-enhanced Cone Beam CT (**a**) and treated with 3 x 10 Gy (BED = 60 Gy) spaced by 48h WBI delivered with FLASH or CONV radiation therapy. Tumor volumes were calculated with the formula of an ellipsoid volume: $V=\frac{4}{3} ×π × L × W × H$. Mean tumor volume ± SEM, *N* = 12 animals per group. *P* values were derived from the Mann–Whitney U test: \*\*p < 0.005 compared FLASH *vs* CONV group. α/β ratio of 10 for BED calculation on the tumor. Survival curves of U87 GBM bearing mice (**b**) treated with 3 x 10 Gy WBI spaced by 48h delivered with FLASH or CONV-RT. *N*=12 animals per group. *P* values were derived from log-rank test: \*p < 0.05; \*\*\*\*p < 0.0001 compared with the control group.