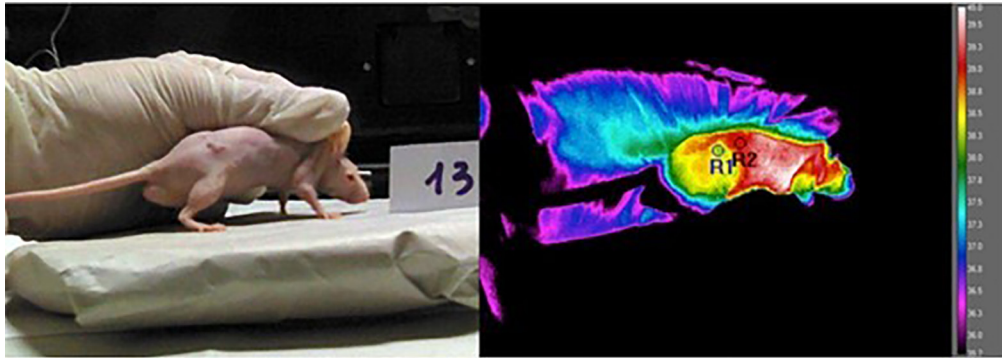


**Figure S1** Experimental setup for small animal irradiations. Left: protruding cone and neutron reflector transversal to the beam axis direction. Right: small animals positioning, on the periphery of the neutron reflector, beam axis view.



**Figure S2** Visible (left) and infrared (right) images of thermography studies taken prior to BNCT treatments. R1 and R2 (infrared image) are examples of selected regions for tumor and normal tissue temperature measurements.

**Table S1** Response to the BNCT treatment

	Irradiation time (minutes)	Total Physical Dose Gy	PR (%)	CR (%)
BNCT I	37±0.5	4.95	8.70	0
BNCT II	55±0.5	6.88	9.1	27.30

The comparison response of the BNCT I and the BNCT II groups, is shown. For the BNCT I group, the received physical dose was 4.95 Gy and for the BNCT II group it was 6.88 Gy. PR: Vf/Vi <1 and >0, CR: Vf/Vi =0. PR, partial response; CR, complete response.

**Table S2** BNCT I

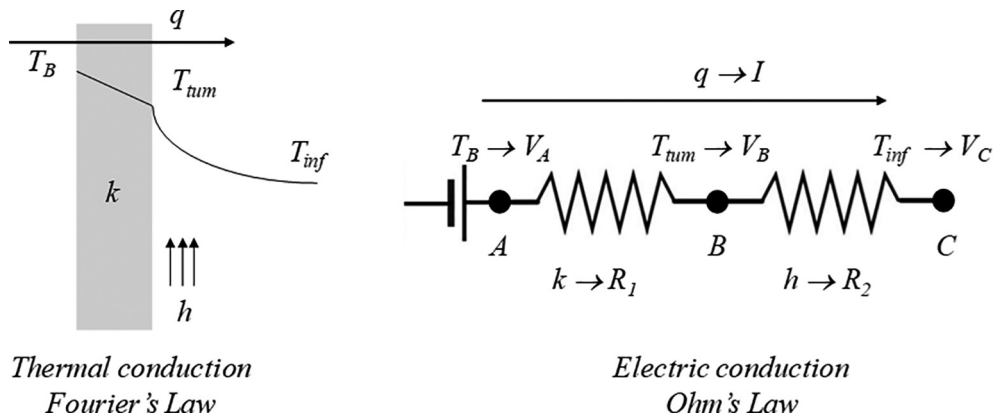
# Mouse	Tumor T (°C), Pre irradiation	Body T (°C), Pre irradiation	Tinf (°C)	Tumor T (°C) – Tinf (°C)	Body T (°C) – Tumor T (°C)	Vf/Vi	DT (Tumor-inf)/DT (Body-Tumor)
1	20.65	37.50	20.00	0.65	16.85	5.11	0.039
2	29.35	36.90	20.00	9.35	7.55	3.05	1.238
3	20.91	37.00	20.00	0.91	16.09	4.11	0.057
4	21.95	36.20	20.00	1.95	14.25	1.83	0.137
5	29.23	37.10	20.00	9.23	7.87	2.08	1.173
6	27.07	37.20	20.00	7.07	10.13	3.89	0.698
7	26.31	37.20	20.00	6.31	10.89	3.53	0.579
8	28.14	37.20	20.00	8.14	9.06	2.55	0.898
9	26.40	37.20	20.00	6.4	10.8	1.68	0.593
10	28.88	37.30	20.00	8.88	8.42	2.79	1.055
11	28.27	37.00	20.00	8.27	8.73	1.40	0.947
12	28.01	36.70	20.00	8.01	8.69	5.74	0.922
13	26.29	36.60	20.00	6.29	10.31	1.42	0.610
14	26.16	37.00	20.00	6.16	10.84	1.27	0.568
15	28.97	36.90	20.00	8.97	7.93	1.21	1.131
16	28.40	36.40	20.00	8.4	8	1.12	1.050
17	28.85	37.50	20.00	8.85	8.65	1.91	1.023
18	30.31	36.80	20.00	10.31	6.49	3.37	1.589
19	31.15	36.50	20.00	11.15	5.35	1.71	2.084
20	28.50	36.90	20.00	8.5	8.4	1.31	1.012
21	32.04	36.40	20.00	12.04	4.36	0.56	2.761
22	29.11	37.80	20.00	9.11	8.69	0.85	1.048
23	26.68	36.60	20.00	6.68	9.92	3.27	0.673
24	20.65	37.50	20.00	0.65	16.85	5.11	0.039
25	29.35	36.90	20.00	9.35	7.55	3.05	1.238

For each mouse of BNCT I group the tumor and body temperatures pre irradiation in °C , (measured by SIRI), T inf and the different parameters calculated [Tumor T (°C) – Tinf (°C); Body T (°C) –Tumor T (°C)] and the Vf/Vi ratio for each tumor.

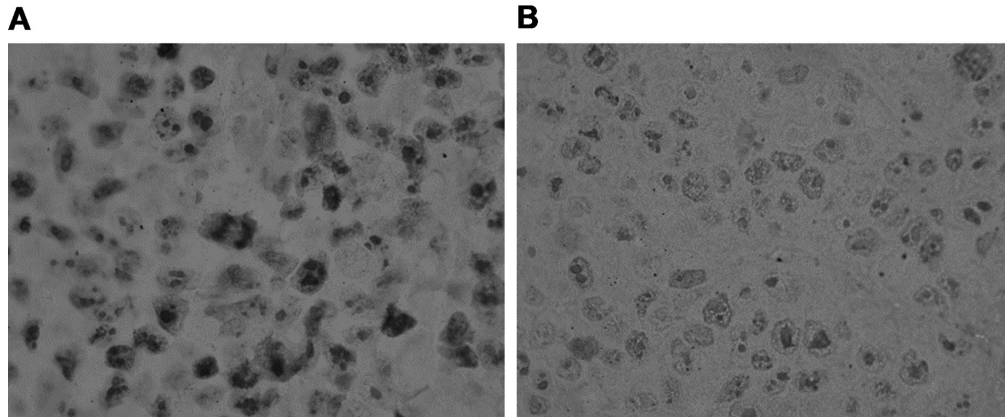
**Table S3** BNCT II

# Mouse	Tumor T (°C), Pre irradiation	Body T (°C), Pre irradiation	Tinf (°C)	Tumor T (°C) – Tinf (°C)	Body T (°C) – Tumor T (°C)	Vf/Vi	DT (T <sub>tumor-inf</sub> )/DT (Body-Tumor)
1	37.90	38.90	28.00	9.90	1.00	4.17	9.90
2	37.20	39.50	28.00	9.20	2.30	9.36	4.00
3	38.10	39.00	28.00	10.10	0.90	2.41	11.22
4	38.20	39.10	28.00	10.20	0.90	0.00	11.33
5	37.90	38.90	28.00	9.90	1.00	2.54	9.90
6	38.50	39.70	28.00	10.50	1.20	0.55	8.75
7	38.20	39.90	28.00	10.20	1.70	6.81	6.00
8	38.00	39.30	28.00	10.00	1.30	6.96	7.69
9	38.20	39.40	28.00	10.20	1.20	3.65	8.50
10	38.60	39.60	28.00	10.60	1.00	0.00	10.60
11	38.20	39.90	28.00	10.20	1.70	0.00	6.00

For each mouse of BNCT II group the tumor and body temperatures pre irradiation in °C, (measured by SIRI), T inf and the different parameters calculated [Tumor T (°C) – Tinf (°C); Body T (°C) –Tumor T (°C)] and the Vf/Vi ratio for each tumor.



**Figure S3** Electrical conduction analogy based on the functional dependence of the Fourier thermal conduction law. This analogy permits obtaining a quantity proportional to physical properties only, independent of local and ambient values (assuming that natural convection is the same throughout the different measurements), suitable for comparing protocols where very different temperature values are measured.



**Figure S4** Tumor proliferative state at 24 hours post irradiation. Representative micrograph of samples from the Control group (A) and samples from the BNCT II group (B) 24 hours after irradiation are shown. The Control Group showed a stronger label of Ki-67 antibody staining than the BNCT II group. The BNCT therapy could be acting on the proliferative state of the tumor at 24 post irradiations. Magnification 100 $\times$ .