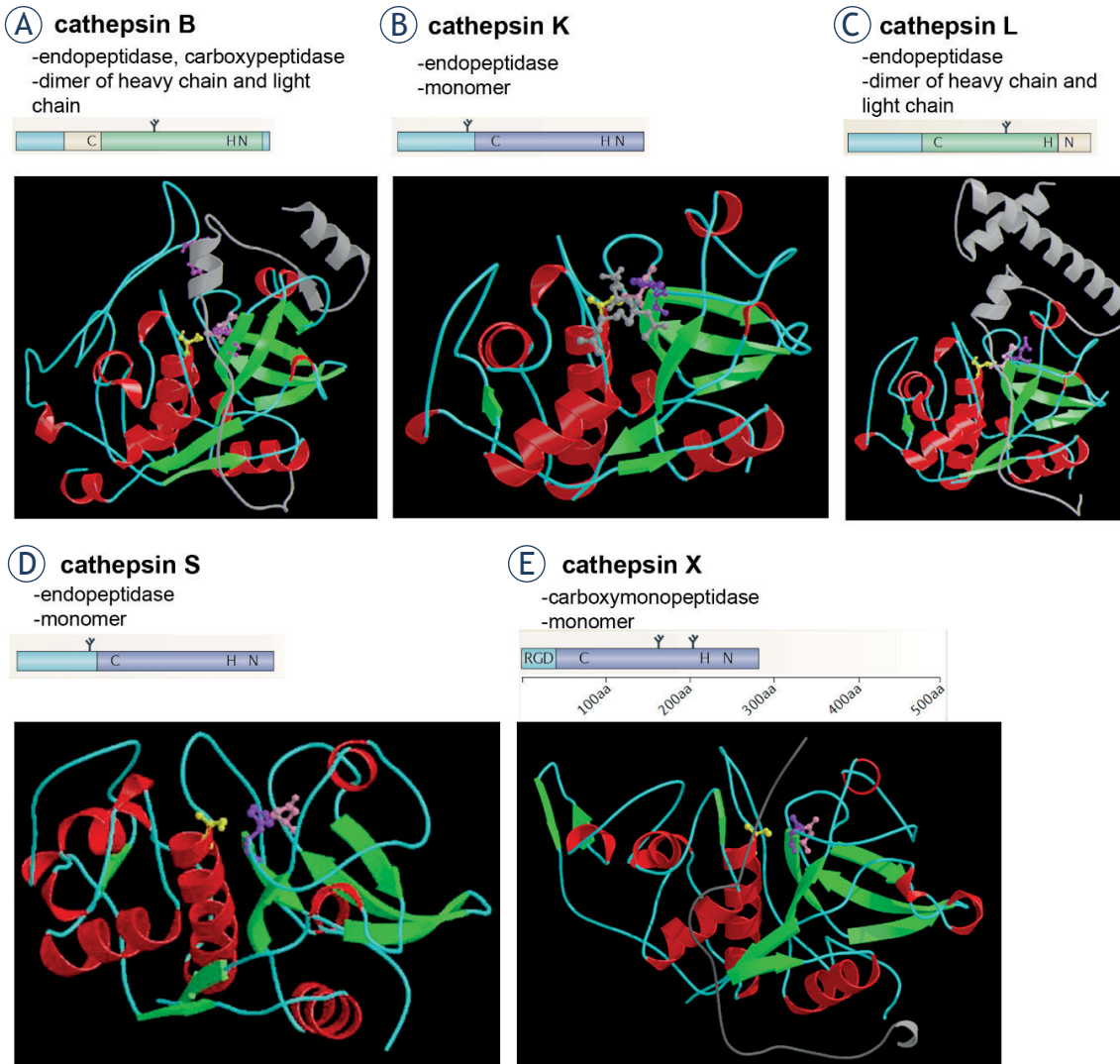


Localization patterns of cathepsins K and X and their predictive value in glioblastoma

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Legend

- Propeptide
- Exclusion domain chain
- Mini chain
- Light chain
- Heavy chain
- Main chain
- CHN Catalytic triad
- RGD Integrin-binding motif
- Y N-linked glycosylation

FIGURE S1. Relationship between catalytic activities and structures of cathepsins B, K, L, S and X. Catalytic activity, subunit structure and 3D structures of (A) cathepsin B, (B) cathepsin K, (C) cathepsin L, (D) cathepsin S and (E) cathepsin X. Subunit structures of cathepsins were taken from Olson and Joyce⁶, and 3D structures were taken from MEROPS peptidase database.⁶⁰

The explanations of 3D structures of cathepsins: (A) Catalytic residues are shown in ball-and-stick representation: Cys108 in yellow, His278 in purple and Asn298 in pink. His189 on the occluding loop is shown in purple in ball-and-stick representation. The propeptide is shown in grey; (B) Catalytic residues are shown in ball-and-stick representation: Cys133 in yellow, His276 in purple and Asn296 in pink. E-64 is shown in grey in ball-and-stick representation; (C) Catalytic residues are shown in ball-and-stick representation: Cys138 (engineered to be serine) in yellow, His276 in purple and Asn300 in pink. The propeptide is shown in grey; (D) Catalytic residues are shown in ball-and-stick representation: Cys139 (engineered to be serine) in yellow, His278 in purple and Asn298 in pink; (E) One subunit of the dimer is shown. Catalytic residues are shown in ball-and-stick representation: Cys92 in yellow, His241 in purple and Asn261 in pink. The propeptide is shown in grey.

TABEL S1. Characteristics of the 21 GBM patients. Glioblastoma patients were operated at the Department of Neurosurgery of the University of Ljubljana, University Medical Centre Ljubljana, Slovenia. 6 out of 21 patients were females (median age 60.5 years), whereas the mean age of males was 62 years

Number	Gender	Age at the time of operation (years)	Survival (months)	Newly-diagnosed or recurrent	Therapy (radio- or chemotherapy with temozolomide)	IDH mutation
1	M	46	17	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
2	M	81	7	Newly-diagnosed	Radiotherapy (30 Gy)	No
3	F	48	8	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
4	F	62	32	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
5	M	81	0	Newly-diagnosed	/	No
6	M	43	21	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	Yes, R132H
7	F	56	15	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
8	M	54	3	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, without adjuvant temozolomide therapy	No
9	M	55	26	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
10	M	75	17	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
11	M	66	8	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
12	M	59	16	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
13	F	59	16	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, without adjuvant temozolomide therapy	No
14	F	66	8	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
15	F	67	3	Newly-diagnosed	Radiotherapy (30 Gy)	No
16	M	53	12	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
17	M	59	1	Newly-diagnosed	Without therapy	No
18	M	65	13	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
19	M	62	12	Newly-diagnosed	Radiotherapy (60 Gy) + temozolomide, adjuvant temozolomide therapy	No
20	M	71	12	Newly-diagnosed	Radiotherapy (30 Gy) + temozolomide, adjuvant temozolomide therapy	No
21	M	80	9	Newly-diagnosed	Radiotherapy (30 Gy)	No

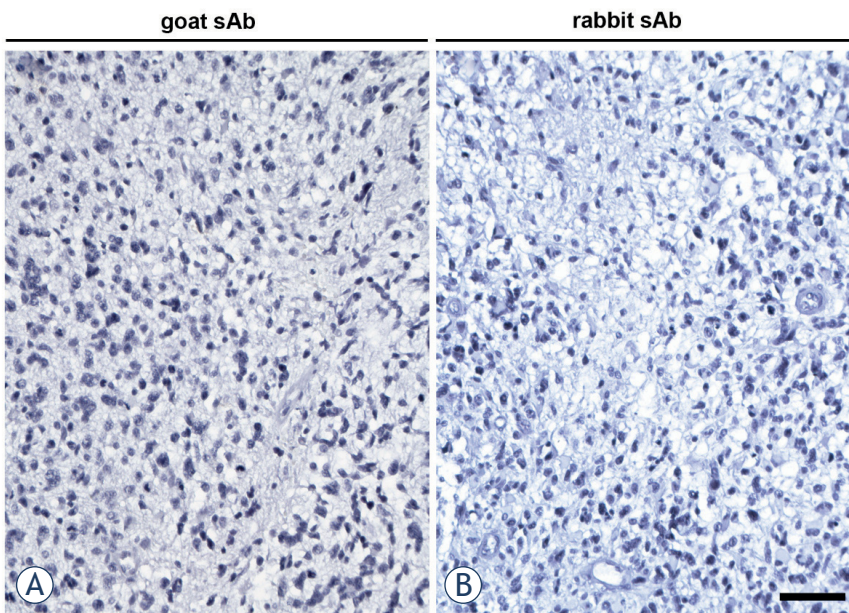


FIGURE S2. Control incubations of paraffin-embedded GBM sections for IHC. Control incubations were performed in the absence of primary antibodies and with goat (A) or rabbit (B) secondary horse-radish-peroxidase–conjugated antibodies (sAb) in the final dilution of 1:200. Scale bar = 50 μ m.