

**Table SI.** Available clinical studies on the use of [<sup>68</sup>Ga]-DOTA-conjugated somatostatin receptor-targeting peptide PET in patients with glioma.

First author, year	Investigated radiotracer	Subject	No. of subjects	Tumor diagnosis	Tracer dosage	Tracer uptake time, min	PET performance	(Ref.)
Collamati <i>et al</i> , 2015	<sup>68</sup> Ga-DOTATOC	Human	12	Recurrent glioma (n=12), including high-grade glioma (n=10), oligodendroglioma (n=1) and pontine glioma (n=1)  (Note: Grading N/A)	3 MBq/kg	50	<i>"The tumor to-nontumor ratio was always at least 4 and was twice as high in a third of the cases. The only case in which uptake was marginal was the only oligodendroglioma in the sample. [...] In high-grade gliomas, the uptake was lower than in meningiomas, but the tumor-to-nontumor ratio was higher than 4, which implies that the tracer can still be effective for radioguided surgery"</i>	(13)
Kiviniemi <i>et al</i> , 2015	<sup>68</sup> Ga-DOTATOC  <sup>68</sup> Ga-DOTANOC  (Note: <sup>68</sup> Ga-DOTANOC replaced <sup>68</sup> Ga-DOTATOC as the tracer in practice after first 3 patients due to poor availability of the DOTATOC precursor)	Human	27	Primary glioma (N=17), including glioblastoma IV (n=5), glioblastoma with oligodendroglial component IV (n=2), gliosarcoma IV (n=1), astrocytoma III (n=7), oligodendroglioma III (n=1) and oligoastrocytoma III (n=1)	123 MBq (median) ( <sup>68</sup> Ga-DOTANOC) 130 MBq (median) ( <sup>68</sup> Ga-DOTATOC)	60	<i>"All 19 high-grade gliomas with uptake demonstrated disrupted blood-brain barrier [...] whereas no uptake was detected with intact blood-brain barrier"</i>	(8)

				Recurrent glioma (N=10), including glioblastoma IV (n=6), astrocytoma III (n=1), oligodendroglioma III (n=1) and oligoastrocytoma III (n=2)				
Li <i>et al</i> , 2023	<sup>68</sup> Ga-DOTATATE	Human	1	Recurrent glioma (N=1), including oligodendroglioma (n=1)  (Note: Grading N/A)	N/A	N/A	<i>"[...] <sup>68</sup>Ga-DOTATATE PET imaging depends on the blood-brain barrier permeability, limiting the utility for visualizing tumor regions. [...] the pseudoprogession of glioma may cause <sup>68</sup>Ga-DOTATATE uptake [...]"</i>	(16)
Savelli and Muni, 2015	<sup>68</sup> Ga-DOTANOC	Human	1	Recurrent glioma (N=1), including oligodendroglioma III (n=1)	110 MBq	60	<i>"<sup>68</sup>Ga DOTANOC PET/CT disclosed the presence of a grossly round-shaped uptake corresponding to the surgical wall. [...] <sup>68</sup>Ga DOTANOC PET/CT has high sensitivity and specificity for SSTR's detection in oligodendroglioma"</i>	(17)

Lapa <i>et al</i> , 2015	<sup>68</sup> Ga- DOTATATE	Human	3	Primary glioma (N=3), including glioblastoma IV (n=3)	121±12 MBq (mean)	40-60	<i>"All 3 patients who underwent SSTR-PET/CT showed areas of markedly increased <sup>68</sup>Ga- DOTATATE uptake. Median SUV<sub>mean</sub> was 3.9 [...]. [...] <sup>68</sup>Ga-DOTATATE uptake was highest in areas with distinct contrast enhancement on MR imaging. [...] somatostatin receptor-targeted tracer uptake in glioblastoma seems to be highly unspecific and caused by the disruption of the blood- brain barrier."</i>	(15)
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PET, positron emission tomography.

**Table SII.** Available preclinical studies on the use of [68Ga]-DOTA-conjugated somatostatin receptor-targeting peptide PET in glioma models.

First author, year	Investigated radiotracer	Receiving subject	Transplanted biomaterial	Mode of transplantation	Tumor diagnosis	No. of animals	PET performance	(Ref.)
Kiviniemi <i>et al</i> , 2014	<sup>68</sup> Ga-DOTATOC	Rats and mice	BT4C cell line	Orthotopic (brain) and heterotopic (subcutaneously)	Chemically-induced malignant glioma  (Note: Grading N/A)	9 and 16	<i>“Weak signal in PET imaging [...] suggests only limited benefit of [<sup>68</sup>Ga]DOTATOC [...] in this tumor model for in vivo imaging of SSTR2 status. [...] Visualization of BT4C tumors [...] was limited. Rat orthotopic BT4C gliomas were all modestly visualized [...]. However, of sixteen subcutaneous BT4C tumors in nude mice only six were visualized [...]”</i>	(14)

PET, positron emission tomography.