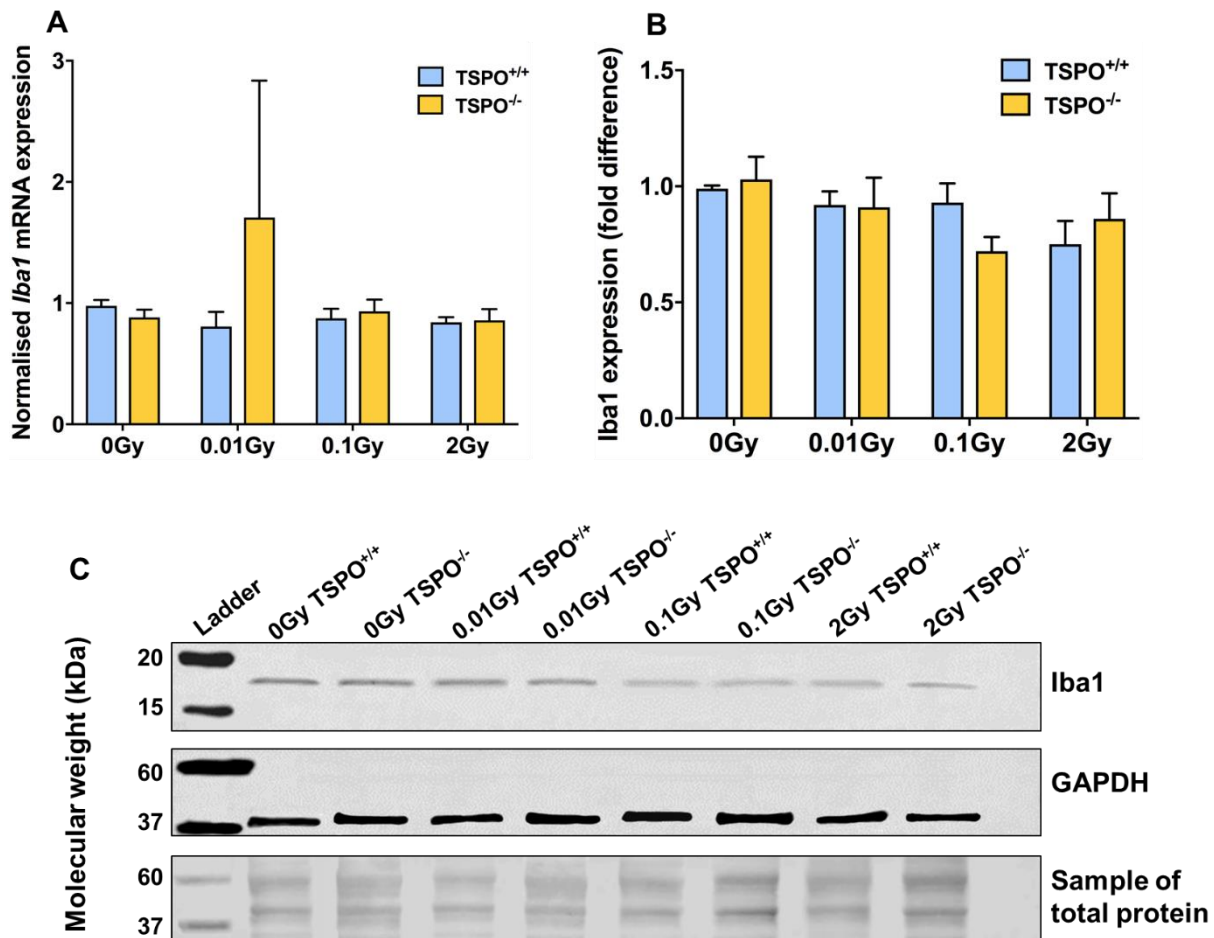
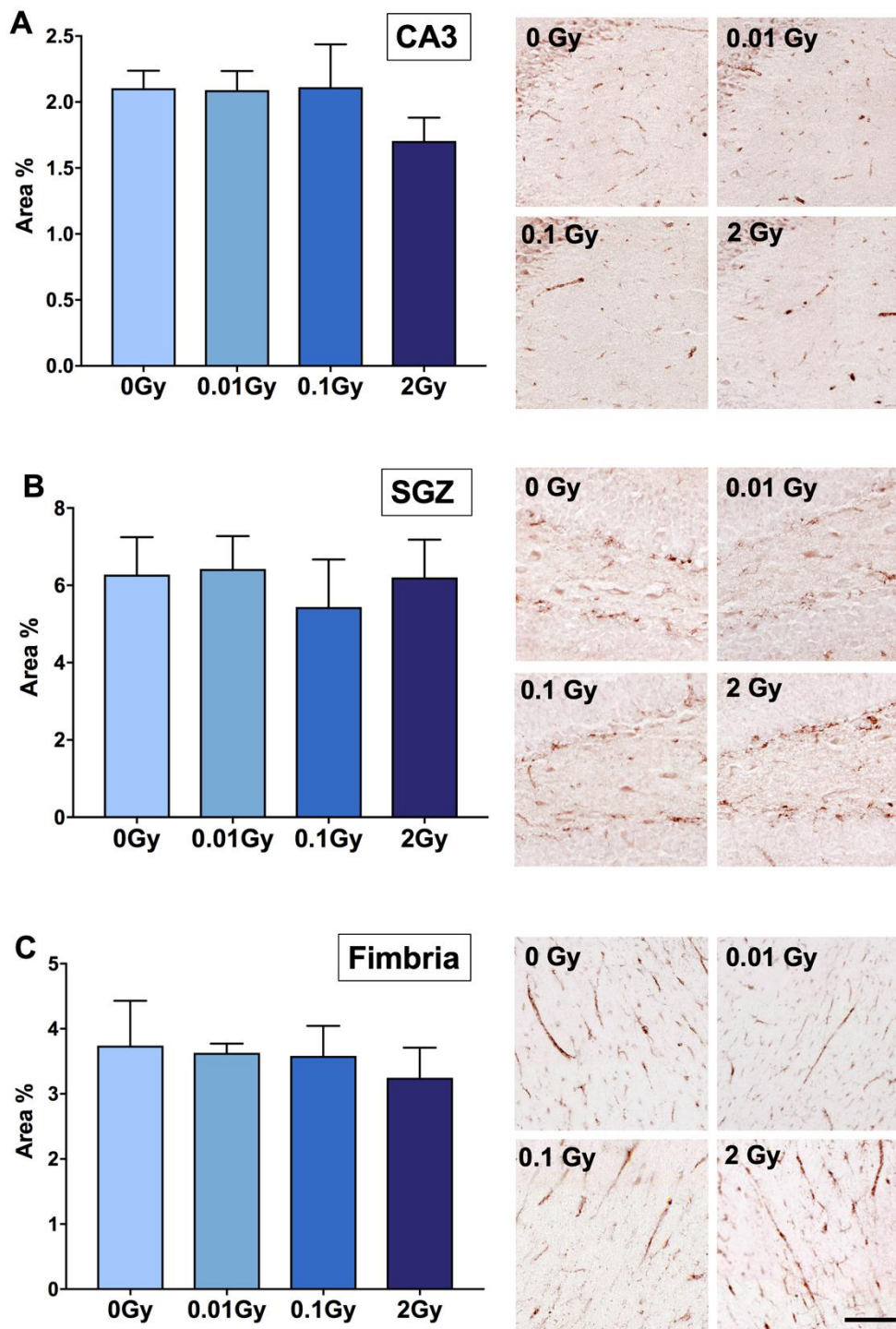


### Supplementary Material



**Supplementary Figure 1.** *Iba1* protein and mRNA expression in brain tissue from wild type (*Tspo*<sup>+/+</sup>) and *TSPO* knockout (*Tspo*<sup>-/-</sup>) mice following whole body gamma irradiation. **A**) *Iba1* mRNA expression (normalised to *Gapdh* and *Actin*) had a slight trend towards a decrease after 0.01 Gy in *Tspo*<sup>+/+</sup> tissue compared to control, though did not reach statistical significance ( $p > 0.05$ ). *Tspo*<sup>-/-</sup> tissue demonstrated similar *Iba1* mRNA expression levels to their *Tspo*<sup>+/+</sup> counterparts, except for at 0.01 Gy where 2 samples had demonstrable increases in *Iba1* expression. **B, C**) Western blotting (normalised to total protein) confirmed the trend towards a downregulation in *Iba1* protein expression after 0.01 Gy in

*Tspo*<sup>+/+</sup> tissue, as well as 0.1 Gy and 2 Gy, though did not reach statistical significance ( $p > 0.05$ ). No statistically significant difference was detected between *Tspo*<sup>+/+</sup> and *Tspo*<sup>-/-</sup> tissue across doses ( $p > 0.05$ ). Blot images have been merged using bands from different membranes. Whilst the entire membrane was used for total protein normalisation, a section of the membrane is displayed in this image. Data are presented as mean and standard error,  $n=3-5$ /group.



**Supplementary Figure 2.** TSPO expression in hippocampal regions after gamma irradiation, measured as area % positive immunostaining with DAB. Regions measured were **A)** CA3, **B)** subgranular zone (SGZ) of the dentate gyrus, and **C)** the white matter of the fimbria region. A trend towards a downregulation in TSPO expression was observed after 0.1 Gy compared to 0 Gy control

in the SGZ region, though this did not reach statistical significance ( $p>0.05$ ). A trend towards a downregulation after 2 Gy was also demonstrated in the CA3 and fimbria, though this did not reach significance ( $p>0.05$ ).  $n = 4-5$  animals/group. Scale bar = 40  $\mu\text{m}$ .

**Supplementary table 1.** RT-qPCR primers used in this study.

Gene	Forward primer (5' – 3')	Reverse primer (5' – 3')	Reference
<i>Tspo</i>	GGGAGCCTACTTTGTACGTGG	TGAAACCTCCCAGCTCTTTCC	
<i>Iba1</i>	ACAAAGAACACAAGAGGCCAACT	TGTGACATCCACCTCCAATCAG	
<i>Actin</i>	GGACCTGACGGACTACCTCATG	TCTTTGATGTCACGCACGATTT	1
<i>Gapdh</i>	CCATGGAGAAGGCTGGGG	CAAAGTTGTCATGGATGACC	2

## Supplementary references

1. Morita, H. et al. Neonatal lethality of LGR5 null mice is associated with ankyloglossia and gastrointestinal distension. *Mol Cell Biol* 24 (2004): 9736-9743.
2. Dveksler, G. S., Basile, A. A. & Dieffenbach, C. W. Analysis of gene expression: use of oligonucleotide primers for glyceraldehyde-3-phosphate dehydrogenase. *PCR Methods Appl* 1 (1992): 283-285.