

# Supplementary Material

## Gastric *Helicobacter suis* Infection Partially Protects Against Neurotoxicity in A 6-OHDA Parkinson's Disease Mouse Model

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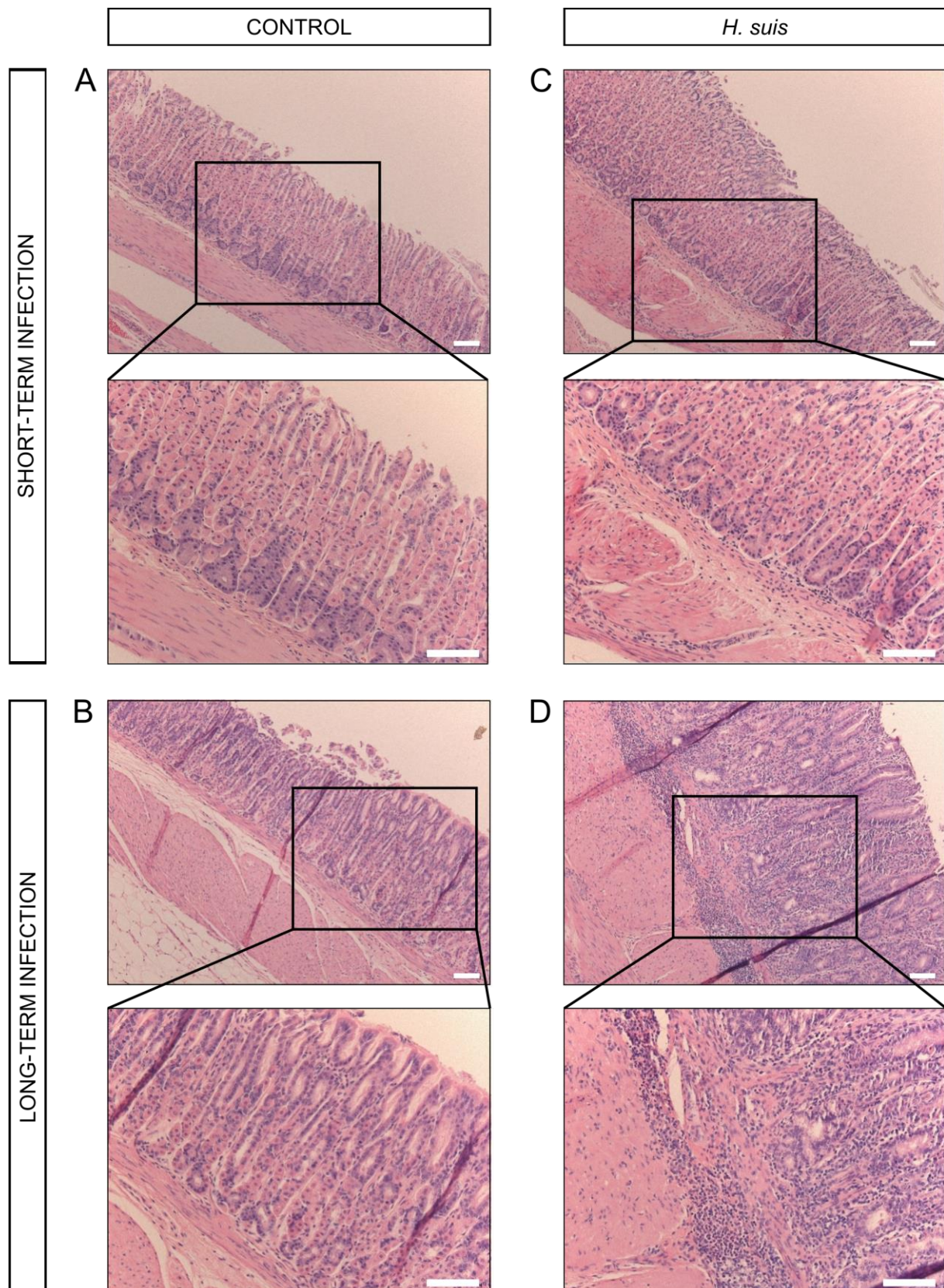
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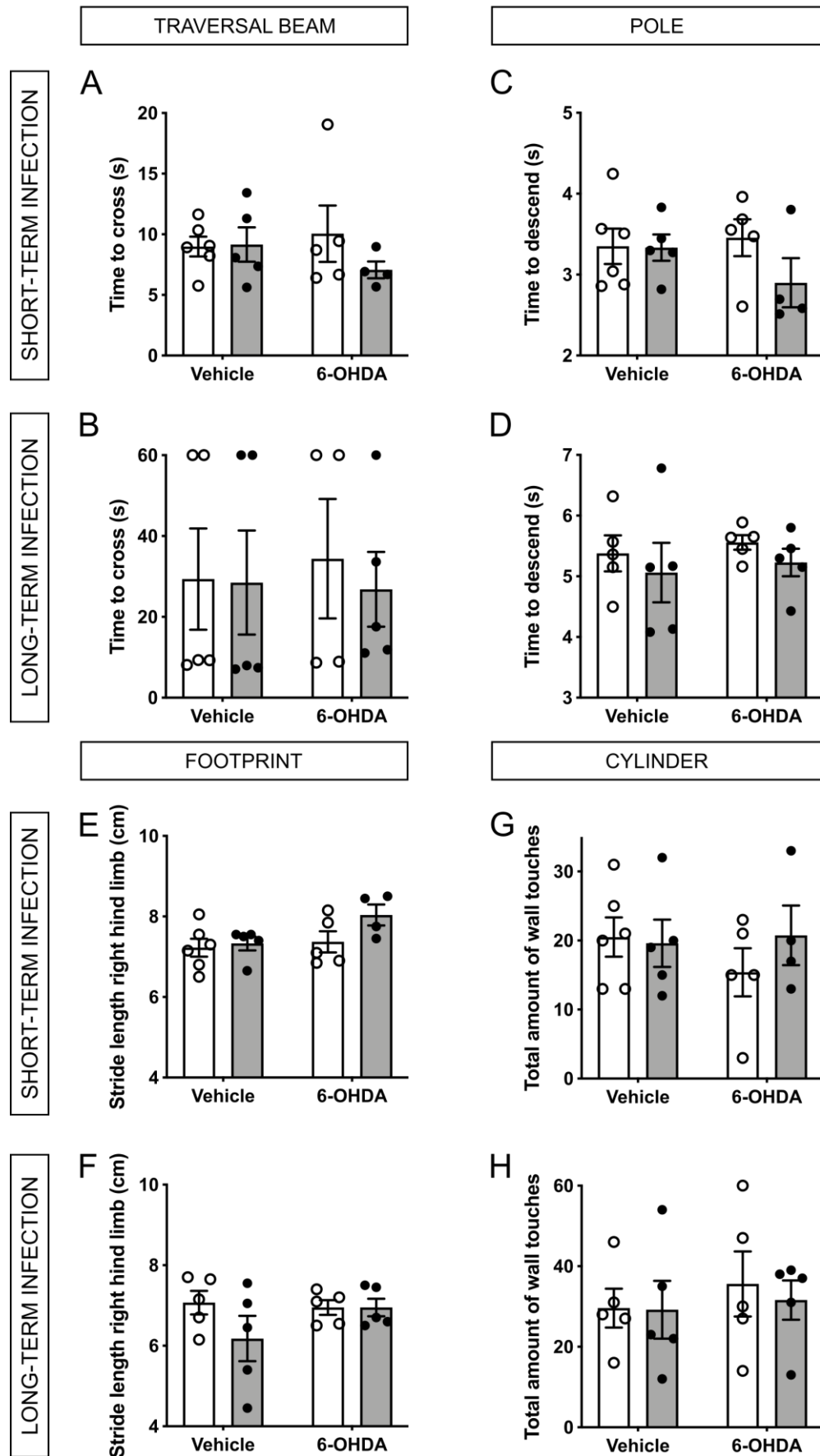
† Shared first authorship.

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**Supplementary Figure S1. Representative haematoxylin and eosin (H&E) images of control and *Helicobacter suis* (*H. suis*)-infected mice with a short- or long-term infection. (A-D) Representative images of the H&E staining of the stomach of mice infected with control broth (A, B) or *H. suis* (C, D) for a short- (A, C) or long-term period (B, D). Scale bar represents 100  $\mu$ m.**

- Control
- *H. suis*

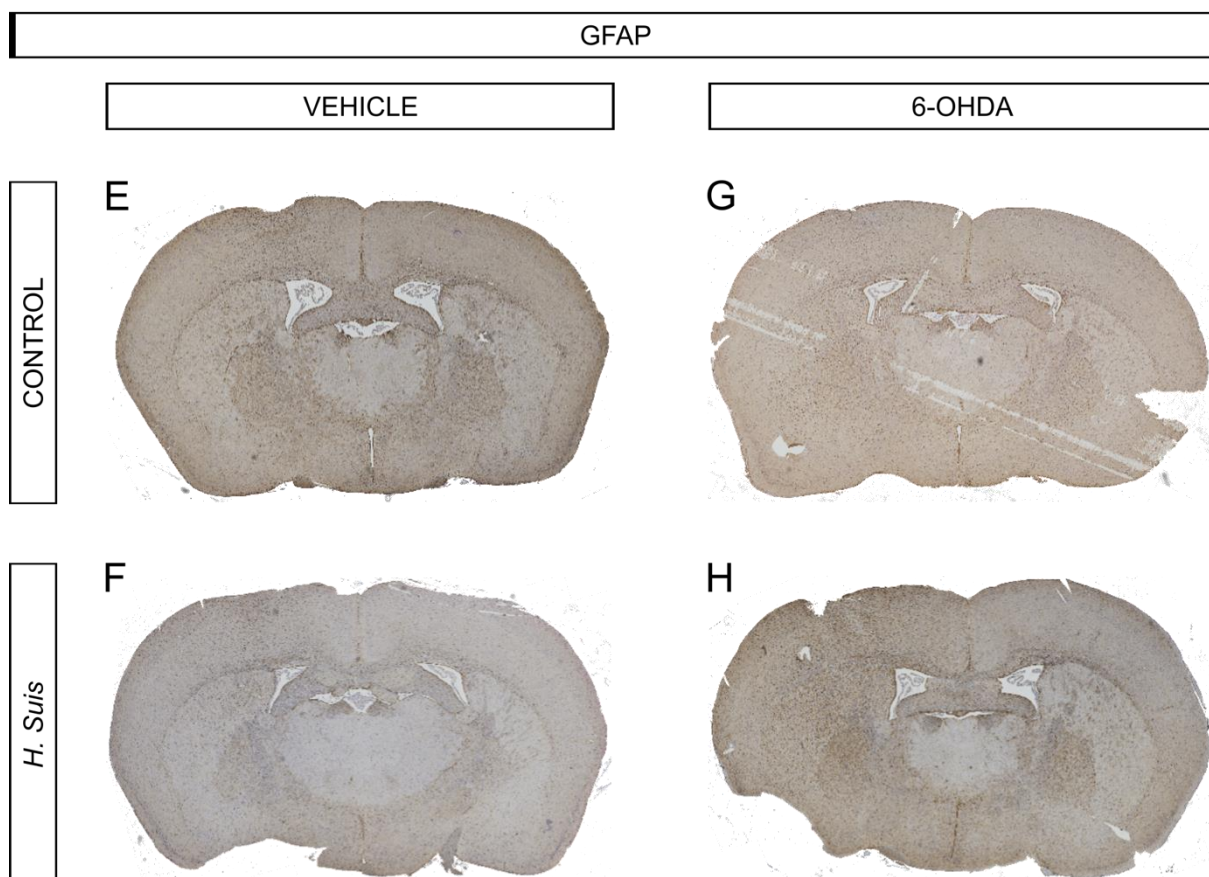
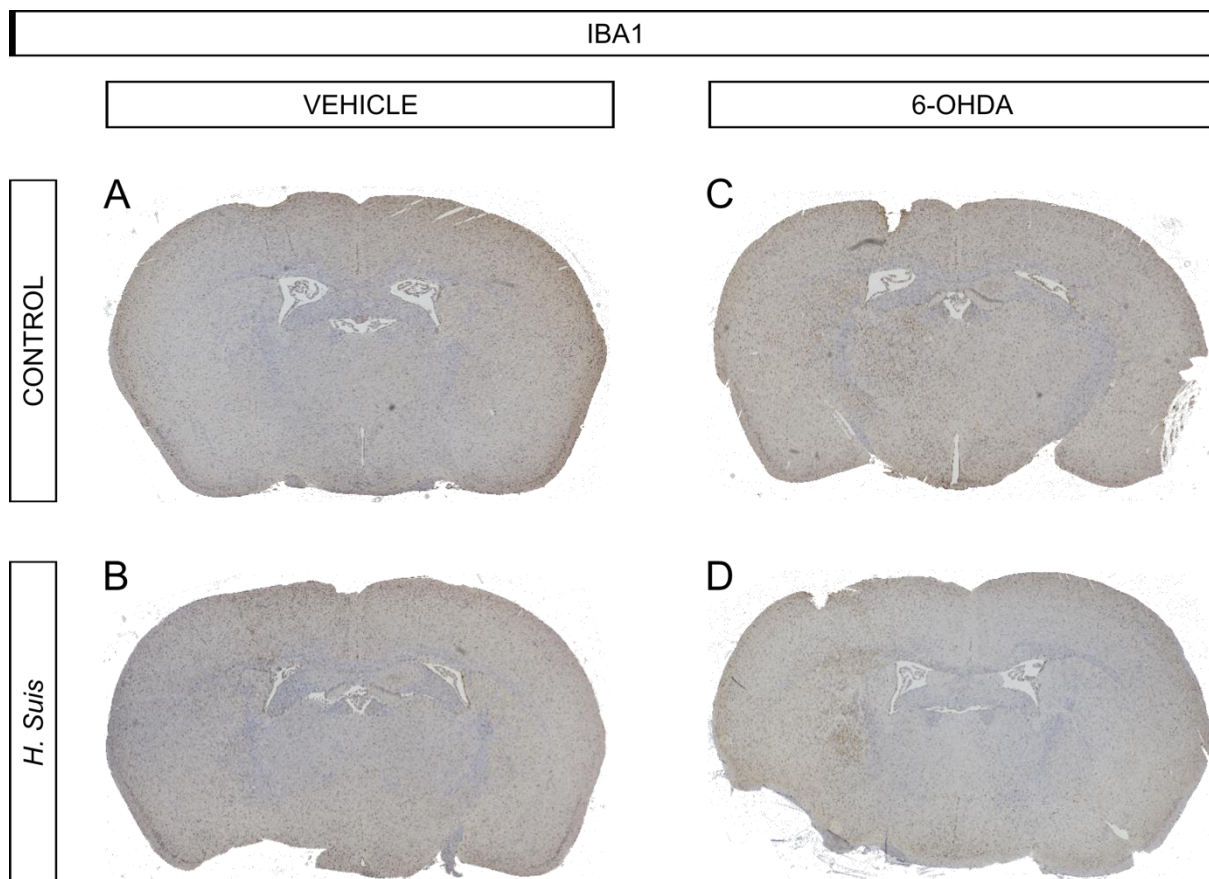


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**Supplementary Figure S2. Behavior and motor function tests at baseline. (A-B)** Time (in seconds (s)) to cross the traversal beam, in the week prior to intrastriatal injection with either 6-hydroxydopamine (6-OHDA) (n = 4-5) or vehicle (n = 5-6), of mice infected with *Helicobacter suis* (*H. suis*) (black) or the control broth (white) for a short- (A) or a long-term period (B). **(C-D)** Time (in seconds (s)) to descend the pole, in the week prior to intrastriatal injection with either 6-OHDA (n = 4-5) or vehicle (n = 5-6), of mice infected with *H. suis* (black) or the control broth (white) for a short-term period (C) or a long-term period (D). **(E-F)** Stride length of the right hind limb according to the footprint analysis, in the week prior to intrastriatal injection with either 6-OHDA (n = 4-5) or vehicle (n = 5-6), of mice infected with *H. suis* (black) or the control broth (white) for a short- (E) or long-term period (F). **(G-H)** Total amount of wall touches in the cylinder test, in the week prior to intrastriatal injection with either 6-OHDA (n = 4-5) or vehicle (n = 5-6), of mice infected with *H. suis* (black) or the control broth (white) for a short- (G) or long-term period (H).

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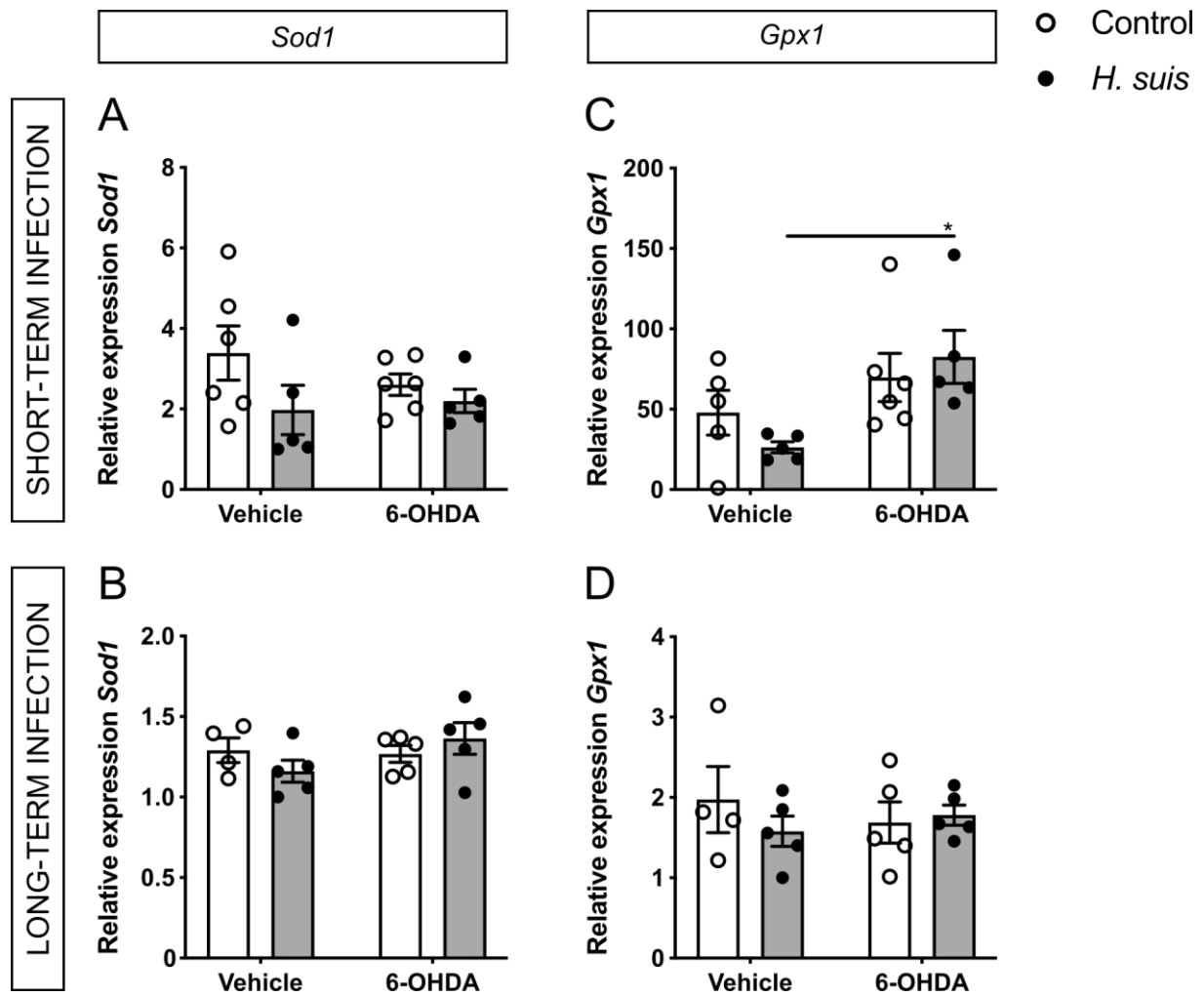




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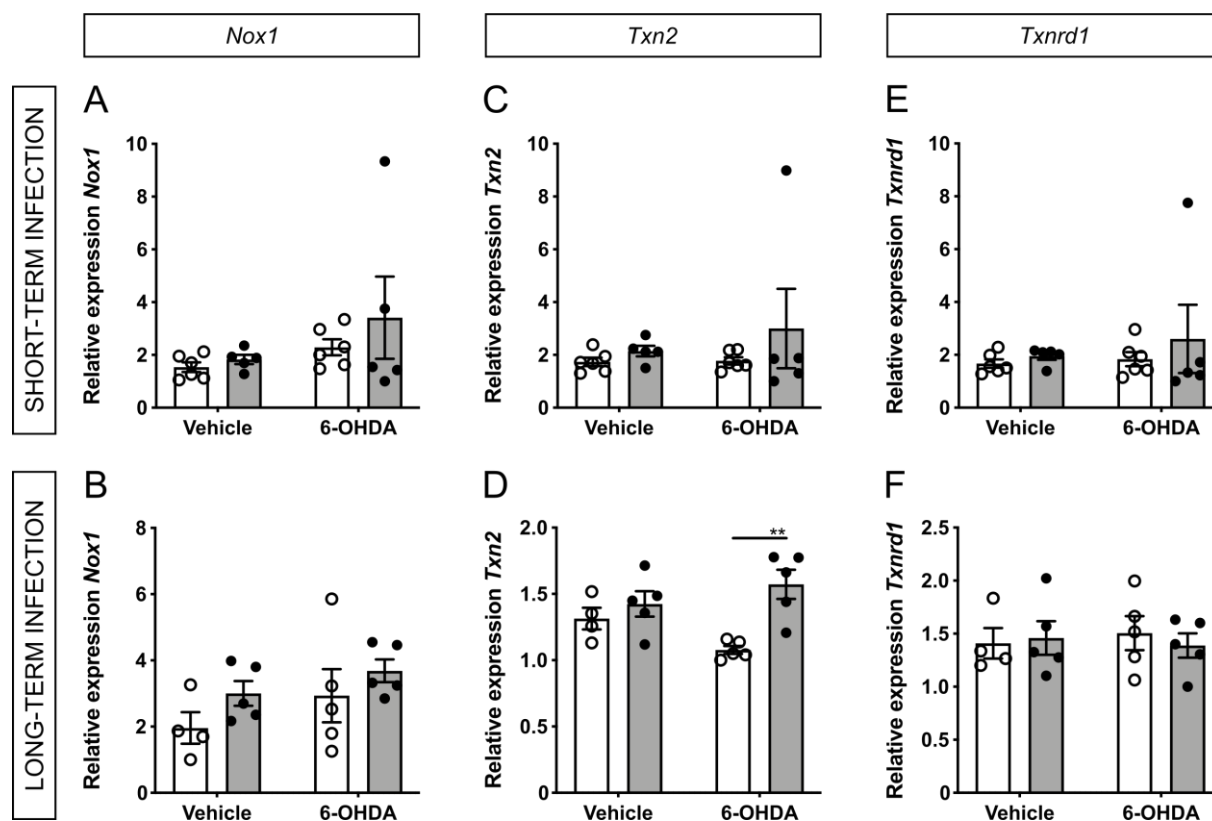
**Supplementary Figure S3. Representative images for GFAP and IBA1 stainings. (A-D)** Representative whole-brain section images of the IBA1 staining (brown) for microglia in the striatum of mice from a control/vehicle subgroup (A), *H. suis*/vehicle subgroup (B), control/6-OHDA subgroup (C) and *H. suis*/6-OHDA subgroup (D). **(E-H)** Representative whole-brain section images of the GFAP staining (brown) for astrocytes in the striatum of mice from a control/vehicle subgroup (E), *H. suis*/vehicle subgroup (F), control/6-OHDA subgroup (G) and *H. suis*/6-OHDA subgroup (H).

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**Supplementary Figure S4. *Helicobacter suis* (*H. suis*) infection and gene expression of endogenous peroxidases. (A-D)** Relative mRNA gene expression of the endogenous peroxidases super oxide dismutase 1 (*Sod1*) (A-B) and glutathione peroxidase 1 (*Gpx1*) (C-D) in the forebrain, 7 days after intrastriatal injection with either 6-hydroxydopamine (6-OHDA) (n = 5) or vehicle (n = 4-5), of mice infected with *H. suis* (black) or the control broth (white) for a short- (A, C) or long-term period (B, D).

- Control
- *H. suis*



**Supplementary Figure S5. *Helicobacter suis* (*H. suis*) infection and gene expression of antioxidant nuclear factor (erythroid-derived 2)-like 2 (*Nrf2*)-associated genes. (A-F)** Relative mRNA gene expression of *Nrf2* downstream regulators NADPH oxidase 1 (*Nox1*) (A-B), thioredoxin 2 (*Txn2*) (C-D) and thioredoxin reductase 1 (*Txnrd1*) (E-F) in the forebrain, 7 days after intrastratial injection with either 6-hydroxydopamine (6-OHDA) (n = 5) or vehicle (n = 4-5), of mice infected with *H. suis* (black) or the control broth (white) for a short- (A, C, E) or long-term period (B, D, F).



**Table S1. Overview of RT-qPCR primer sequences used in the current study.**

		Forward primer sequence	Reverse primer sequence
Stomach	<i>H. suis</i>	AAAACAMAGGCGATCGCCCTGTA	TTTCTTCGCCAGGTTCAAAGCG
	<i>H2afz</i>	CGTATCACCCCTCGTCACTT	TCAGCGATTGTGGATGTGT
	<i>Hprt</i>	CAGGCCAGACTTTGTTGGAT	TTGCGCTCATCTTAGGCTTT
	<i>Ppia</i>	AGCATACAGGTCCTGGCATC	TTCACCTTCCCAAAGACCAC
	<i>Il18</i>	CACCTCACAAGCAGAGCACAAAG	GCATTAGAAACAGTCCAGCCCATAC
	<i>Il6</i>	TAGTCCTTCTACCCCAATTTCC	TTGGTCCTTAGCCACTCCTTC
	<i>Kc</i>	GCTGGGATTACCTCAAGAA	TCTCCGTTACTTGGGGACAC
	<i>Lix</i>	CTCAGTCATAGCCGAACCGAGC	CCGTTCTTTCCACTGCGAGTGC
	<i>Il10</i>	CTGGACAACATACTGCTAACCG	GGGCATCACTTCTACCAGGTAA
	<i>Il17a</i>	TTTAACTCCCTTGGCGCAAAA	CTTCCCTCCGATTGACAC
	<i>Tnfa</i>	ACCCTGGTATGAGCCCATATAC	ACACCCATTCCCTTCACAGAG
	<i>Ocln</i>	CCAGGCAGCGTGTTCTT	TTCTAAATAACAGTCACCTGAGGGC
	<i>Cldn1</i>	TCTACGAGGGACTGTGGATG	TCAGATTGAGCAAGGAGTCG
	<i>Cldn3</i>	AAGCCGAATGGACAAAGAA	CTGGCAAGTAGCTGCAGTG
	<i>Cldn5</i>	GCAAGGTGTATGAATCTGTGCT	GTCAAGGTAACAAAGAGTGCCA
	<i>Zo1</i>	AGGACACCAAAGCATGTGAG	GGCATTCTGCTGGTTACA
	<i>Zo3</i>	ACCCTATGGCCTGGGCTTC	CCCGGGTACAACGTGTCC
	<i>Muc1</i>	GGTTGCTTTGGCTATCGTCTATTT	AAAGATGTCCAGCTGCCATA
	<i>Muc5ac</i>	Purchased from Qiagen (Qt01196006)	
	<i>Muc6</i>	TGCTCCCAGAATGAGTACTTCGA	CAGAGGTGGAAGTGTGAACTCAGT
	<i>Muc13</i>	GCCAGTCCTCCACACGGTA	CTGGGACCTGTGCTTCCACCG
Brain	<i>Gadph</i>	TGAAGCAGGCATCTGAGGG	CGAAGGTGGAAGAGTGGGGAG
	<i>Rpl</i>	CCTGCTGCTCTCAAGGTT	TGGTTGTCACTGCCTCGTACTT
	<i>Ubc</i>	AGGTCAAACAGGAAGACAGACGTA	TCACACCCAAGAACAAGCACA
	<i>Hprt</i>	AGTGTTGGATACAGGCCAGAC	CGTGATTCAAATCCCTGAAGT
	<i>Cat</i>	ACATGGTCTGGGACTTCTGG	CAAGTTTTTGATGCCCTGGT
	<i>Sod1</i>	AACCAGTTGTGTTGTCAGGAC	CCACCATGTTTCTTAGAGTGAGG
	<i>Sod2</i>	GCCCCCTGAGTTGTTGAATA	AGACAGGCAAGGCTCTACCA
	<i>Gpx1</i>	GAGGGTAGAGGCCGGATAAG	AGAAGGCATACACGGTGGAC
	<i>Gpx2</i>	GAGAACGGCACCAACGAG	TCAGGTAGGCGAAGACGG
	<i>Nrf2</i>	TCTTGGAGTAAGTCGAGAAGTGT	GTTGAAACTGAGCGAAAAAGGC
	<i>Gclm</i>	AGGAGCTTCGGGACTGTATCC	GGGACATGGTGCATTCCAAAA
	<i>Gclc</i>	GGGGTGACGAGGTGGAGTA	GTTGGGGTTTGTCTCTCCC
	<i>Gsr</i>	CACGGCTATGCAACATTTCGC	GTGTGGAGCGGTAACTTTTTTC
	<i>Hmox1</i>	AAGCCGAGAATGCTGAGTTCA	GCCGTGTAGATATGGTACAAGGA
	<i>Nox1</i>	AGAGCCACTGACATCCTGACAG	ACTTGGGGTGGGCAGTAGCTA
	<i>Nox2</i>	CATTCACTGACCTCTGCTCC	ACAGCCACAAGCATTGAATAGC
	<i>Txn2</i>	TGGGCTTCCCTCACCTCTAAG	CCTGGACGTTAAAGGTCGTCA
	<i>Txndr1</i>	CCCACTTGCCCCAACTGTT	GGGAGTGTCTTGAGGGAC