

## **Supplementary Information**

### **Nanocurcumin is superior to native curcumin in preventing degenerative changes in Experimental Cerebral Malaria**

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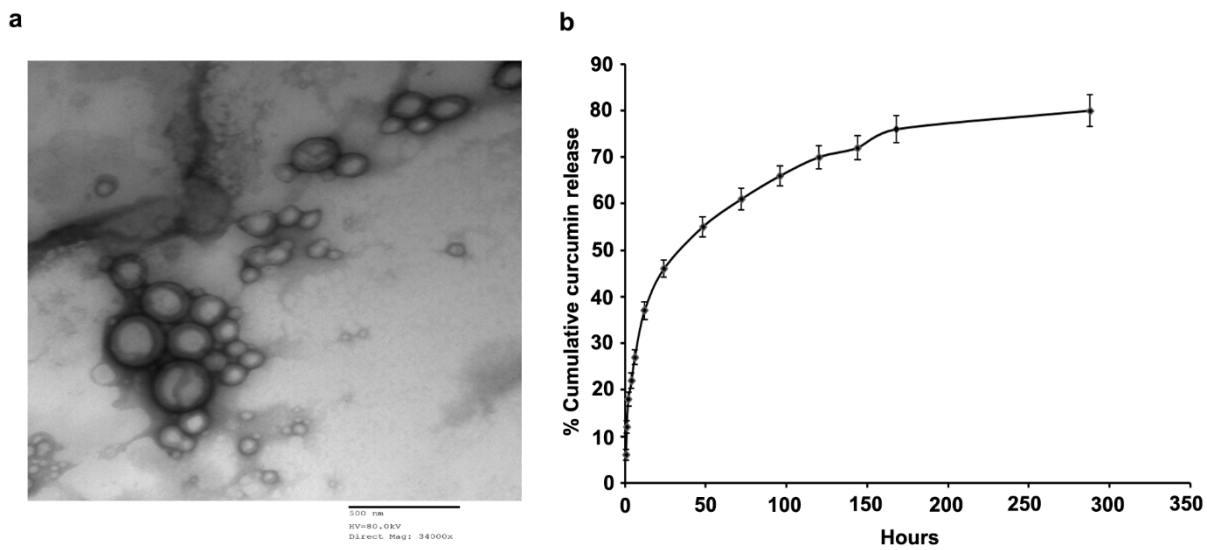
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**Supplementary Table S1. (C) PLGA-curcumin nanoparticles size, load and entrapment efficiency.**

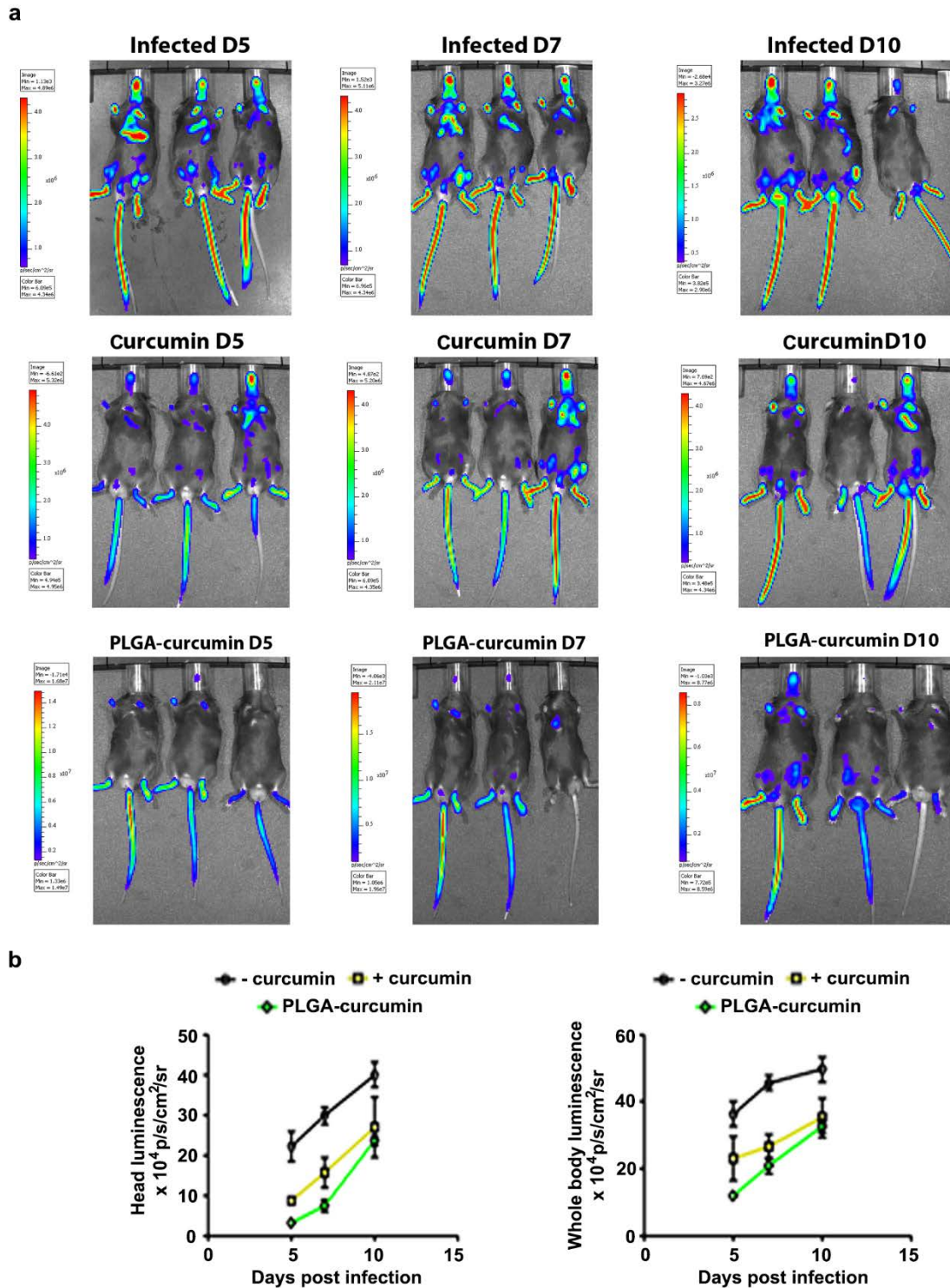
Formulation	Size (nm)	Zeta potential (mV)	PDI	Load ( $\mu\text{g}/\text{mg}$ )	E E (%)
PLGA dummy nanoparticles	$382.4 \pm 12.6$	$-11.2 \pm 2.1$	0.26	-	-
PLGA-curcumin nanoparticles	$495 \pm 14.4$	$-13.8 \pm 1.8$	0.24	65	37.91

**Supplementary Table S2. Primers used in qPCR reactions.**

<i>Gene</i>	<i>Gene sequence</i>
<i>CXCR3</i>	<i>Forward 5' AATGCCACCCATTGCCAGTAC 3'</i> <i>Reverse 5' AGCAGTAGGCCATGACCAGAAG 3'</i>
<i>CXCL9</i>	<i>Forward 5' GCCATGAAGTCCGCTGTTCT 3'</i> <i>Reverse 5' GGGTTCCTCGAACTCCACACT</i>
<i>CXCL10</i>	<i>Forward 5' GACGGTCCGCTGCAACTG 3'</i> <i>Reverse 5' GCTTCCCTATGGCCCTCATT 3'</i>
<i>TNF<math>\alpha</math></i>	<i>Forward 5' AAGCCTGTAGCCCACGTCGTA3'</i> <i>Reverse 5' GGCACCACTAGTTGGTTGTCTTTG 3'</i>
<i>IFN<math>\gamma</math></i>	<i>Forward 5' TCAAGTGGCATAGATGTGGAAGAA</i> <i>Reverse 5' TGGCTCTGCAGGATTTTCATG 3'</i>
<i>ICAM-1</i>	<i>Forward 5' GCCTCCGGACTTTCGATCTT 3'</i> <i>Reverse 5' GTCAGGGGTGTCGAGCTTTG 3'</i>
<i>CD8<math>\beta</math></i>	<i>Forward 5' GCTGGTAGTCTGCATCCTGCTTC 3'</i> <i>Reverse 5' TTGCTAGCAGGCTATCAGTCTTGTG 3'</i>
<i>18S rRNA P. berghei ANKA</i>	<i>Forward 5' AAGCATTAATAAAGCGAATACATCCTTAC 3'</i> <i>Reverse 5' GGAGATTGGTTTTGACGTTTATGTG 3'</i>
<i>Granzyme B</i>	<i>Forward 5' CTCCTGCTACTGCTGAC 3'</i> <i>Reverse 5' GTCAGCACAAAGTCCTCTC 3'</i>

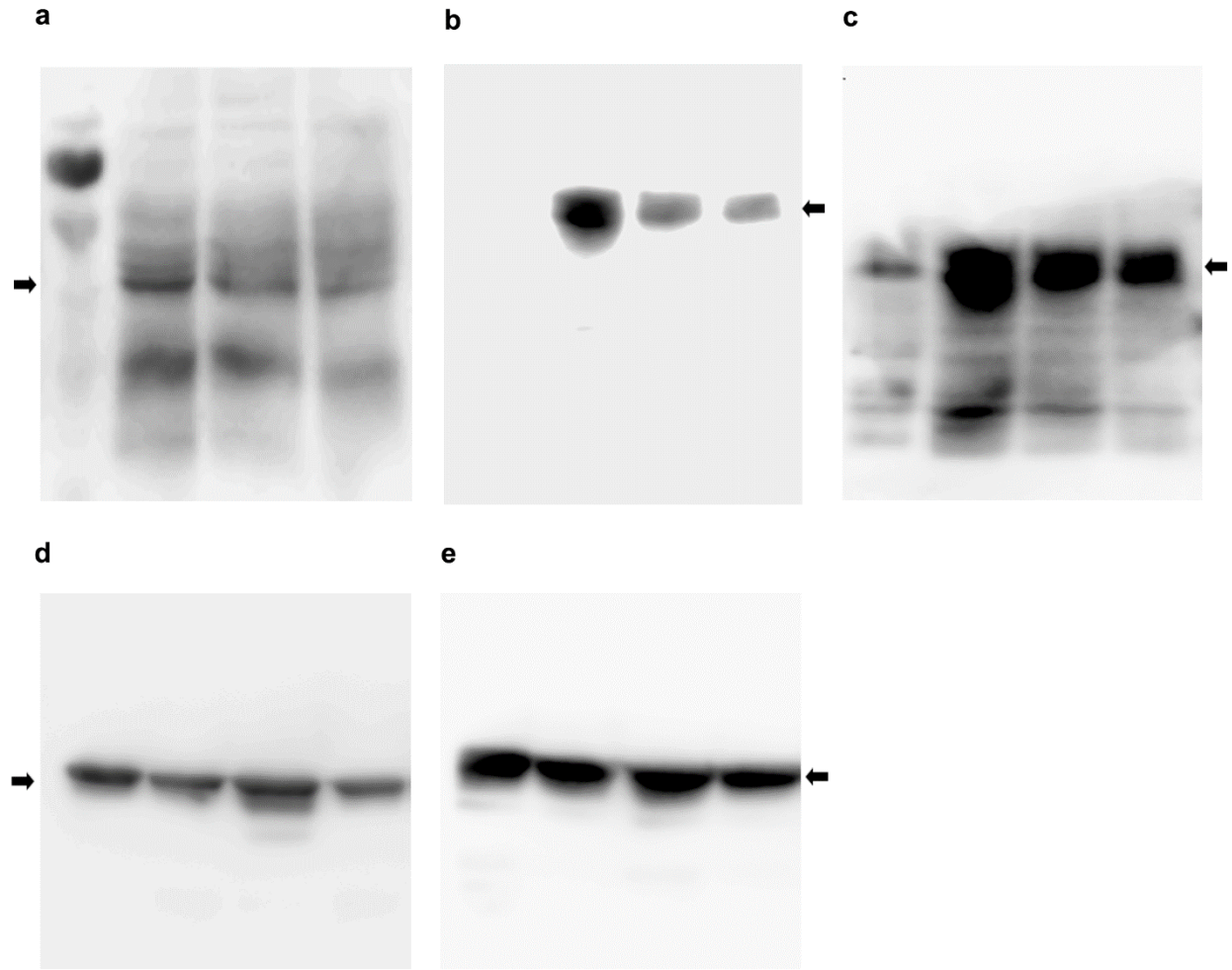


**Figure S1.** Characterization of PLGA-curcumin nanoparticles (a) TEM images of PLGA nanoparticles entrapping curcumin. The average size of particle is around 260 nm. (b) *In vitro* cumulative release of curcumin from PLGA nanoparticles.



**Figure S2.** Quantification of bioluminescence. (a) Whole body bioluminescent images of untreated (- curcumin), native curcumin (+ curcumin) and PLGA-curcumin treated mice infected with *P. berghei*-ANKA transgenic parasites expressing luciferase. (b) Quantification of head and

whole body luminescence. The bioluminescence images were taken for three animals on days 5, 7 and 10. The animals were given three oral doses of native curcumin (5 mg) or PLGA-curcumin (5 mg, providing 350  $\mu$ g of curcumin), starting on 3 d.p.i. The data given in the top two rows were published earlier<sup>13</sup> and are included here for comparison. Native curcumin and PLGA-curcumin data were generated in the same experiment.



**Figure S3.** Whole blot images of Figure 4. (a) Whole blot image of brain phospho-NF- $\kappa$ B. (b) Whole blot image of spleen phospho-NF- $\kappa$ B (short exposure). (c) Whole blot image of spleen phospho-NF- $\kappa$ B (long exposure). (d) Whole blot image of brain  $\beta$ -actin used as control. (e) Whole blot image of spleen  $\beta$ -actin used as control. Arrows represent the protein bands given in Figure 4.