

**D-BMAP18 antimicrobial peptide is active *in vitro*, resists to pulmonary proteases but loses its activity in a murine model of *Pseudomonas aeruginosa* lung infection.**

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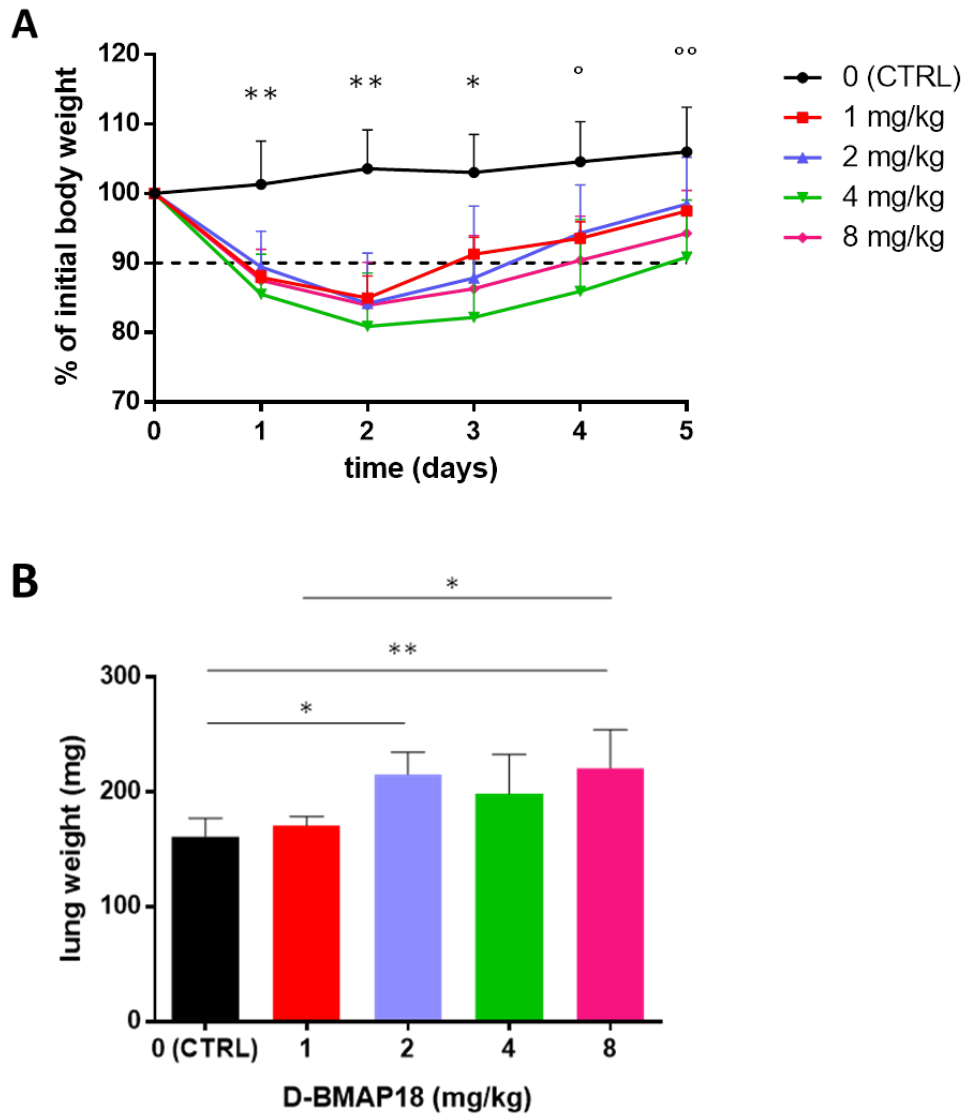
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***In vivo* acute toxicity of D-BMAP18**

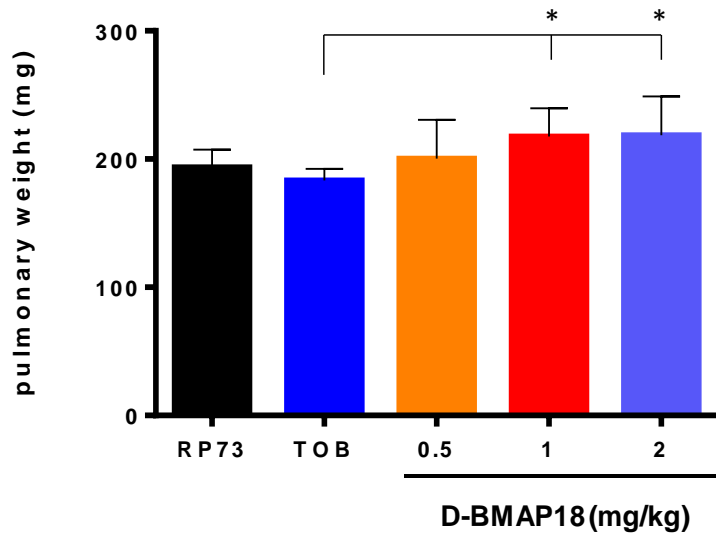
Compared to control unexposed mice, exposure to peptide caused a significant ( $p < 0.01$ ) decrease in weight during the first 2 days regardless of doses used (Figure S1). This effect persisted until day 3 p.e. when peptide was administered at 2, 4, and 8 mg/kg ( $p < 0.05$ ), and until day 4 p.e. at 4 and 8 mg/kg ( $p < 0.05$ ). The reduction caused by exposure to peptide at 4 mg/kg persisted until day 5 p.e. ( $p < 0.01$ ). Mice started to gain their weight after day 2 p.e. regardless of doses administered, although they were not able to completely get the initial body weight until day 5 p.e.. Variations in pulmonary weight confirmed the same trend found for macroscopic score analysis (Figure S2).



**Figure S1.** A) Changes in weight were graphed as the percentage of the body weight before single exposure to peptide. Results are shown as mean + SD values. Statistical analysis was carried out by ANOVA + Tukey's multiple comparison post-test: \*\* $p < 0.01$ , CTRL vs other groups; \* $p < 0.05$ , CTRL vs (2, 4, and 8 mg/kg); ° $p < 0.05$ , CTRL vs (4, and 8 mg/kg); °° $p < 0.01$ , CTRL vs 4 mg/kg. B) Lungs were removed en bloc from the chest via sterile excision, and immediately weighted. Results are shown as mean + SD values. \* $p < 0.05$ , \*\* $p < 0.01$ , ANOVA + Tukey's multiple comparison post-test.

### ***In vivo* antimicrobial activity of D-BMAP18**

The lungs of mice treated with D-BMAP18 1 and 2 mg/kg were slightly more edematous, as suggested by the observed weight, compared to those administrated with tobramycin 10 mg/kg (Figure S2).



**Figure S2.** C57BL/6NCrl lungs were weighted on day 1 following *P. aeruginosa* RP73 infection. Results are mean + SD. \* $p < 0.05$ , ANOVA + Newman-Keuls multiple comparison post-test.