

1 A novel enzyme with antioxidant capacity produced by the
2 ubiquitous skin colonizer *Propionibacterium acnes*

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8 **Supplementary Information**

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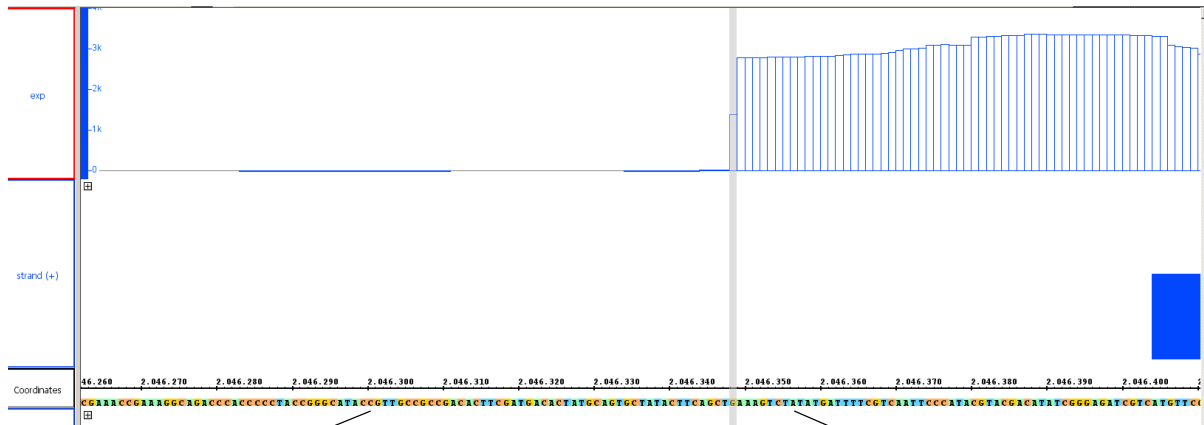
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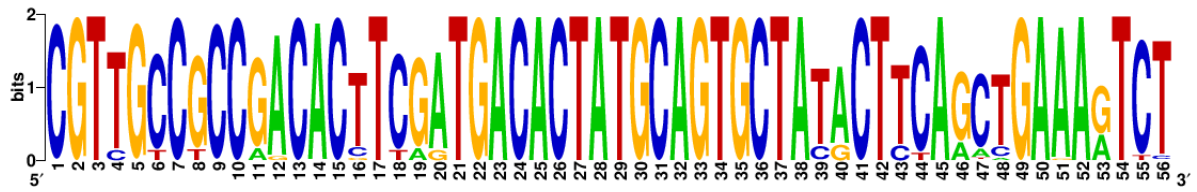
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CGTTGCCGCCGACAC **-35** TTCGAT GACACTATGCAGTGC **-10** TATACT TCAGCT **G** AAAGTCT

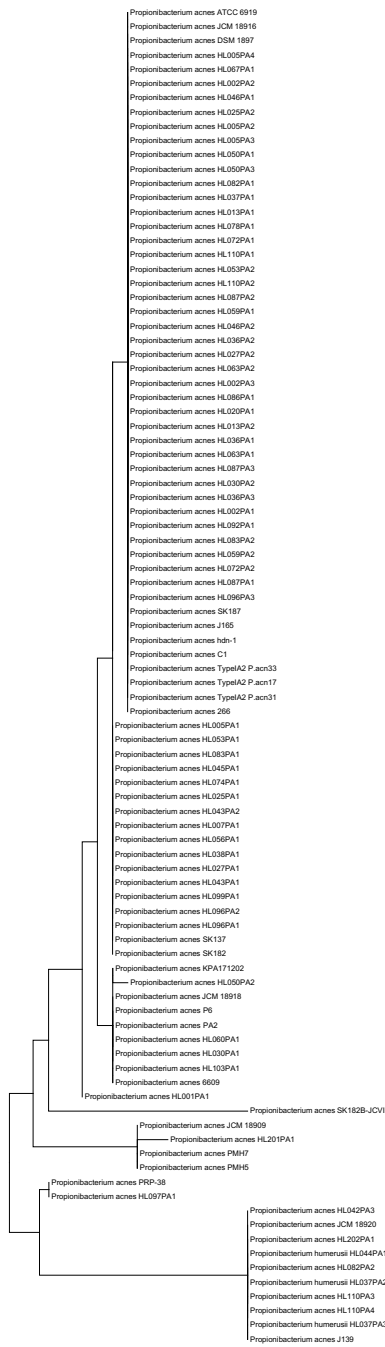
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Supplementary Fig. 2A. Upstream region of *roxP*: Identification of the transcriptional start site and the promoter region. The transcriptional start site is highlighted ('G') as well as the predicted promoter region.



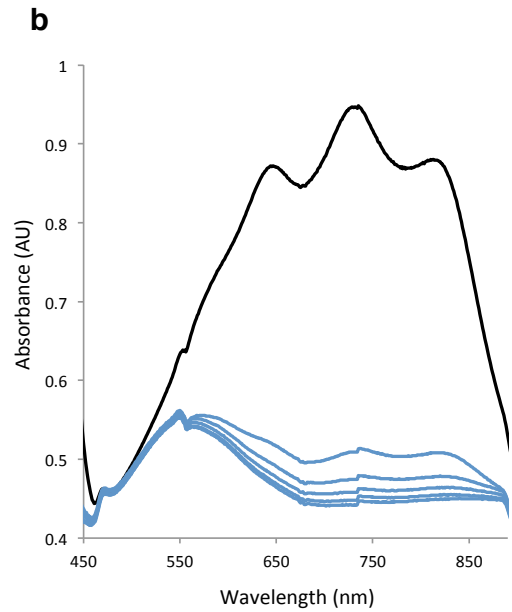
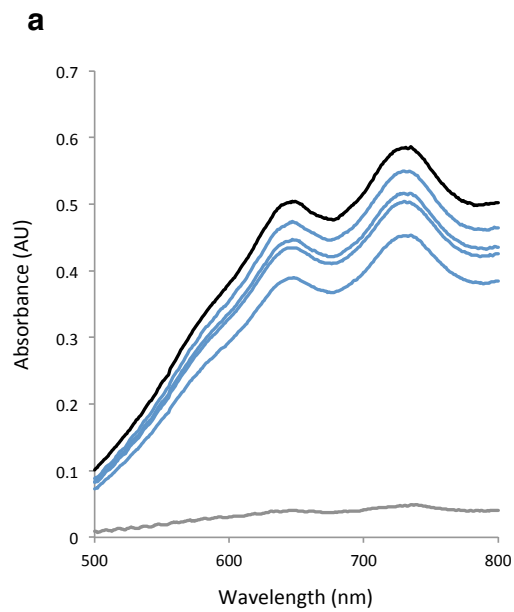
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Supplementary Fig. 2B. Consensus sequence of the *roxP* upstream region based on an alignment of sequences from 94 strains. The alignment was created with MEGA, and the consensus sequence was visualized with WebLogo.



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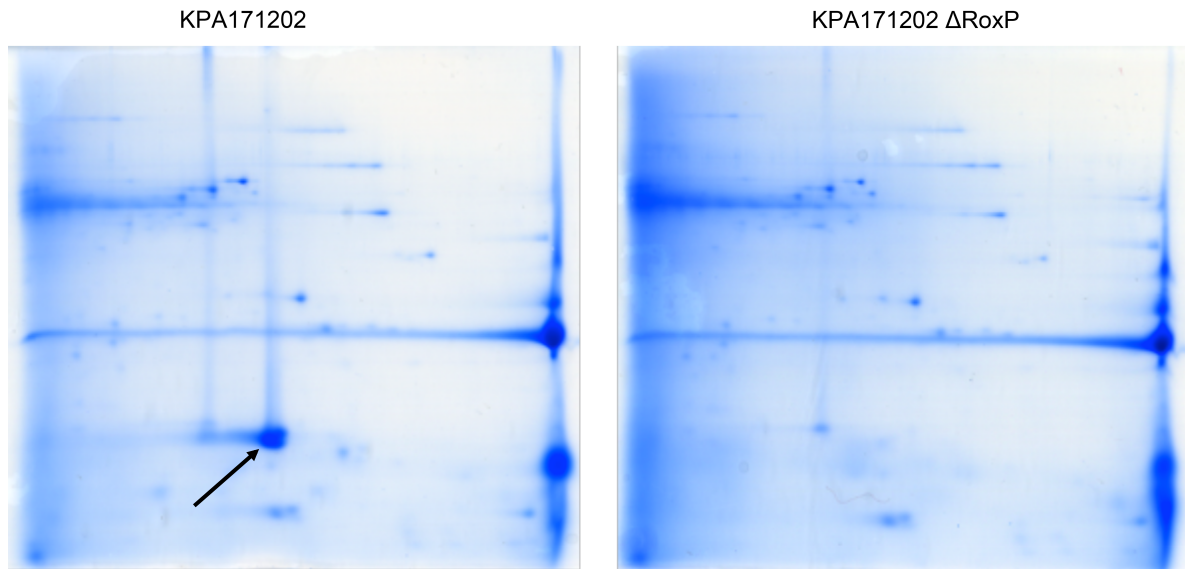
Supplementary Fig. 2C. Phylogenetic analysis of *roxP* upstream region. The *roxP* upstream region, containing the transcriptional start site and the predicted promoter (shown in Fig 2SA), was taken and blasted against all *P. acnes* genomes. The corresponding homologous sequences were extracted and phylogenetically analyzed with MEGA6.



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Supplementary Fig. 3. Vitamin E and RoxP reduce preformed ABTS-radicals. (A) Vitamin E (black line: control; gray line: 15 μ M vitamin E; blue lines: 1.5 μ M vitamin E over 0-5 min) was incubated with preformed ABTS-radicals and changes in absorbance was measured over time (0-5 min). (B) RoxP (black line: control; blue lines: 34 μ M RoxP over 10-60 min) was incubated with preformed ABTS-radicals and changes in absorbance was measured over time (10-60 min).

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188 **Supplementary Fig. 4. Confirmation of successful deletion of *roxP* by 2D gel**
189 **electrophoresis of secreted proteins of *P. acnes*.** RoxP was previously identified among the
190 abundantly secreted proteins. 2D protein gel electrophoresis of secreted proteins of the
191 wildtype and Δ *roxP*-mutant strains clearly showed that RoxP (arrow) is absent among the
192 secreted proteins of the Δ *roxP*-mutant. This confirms that the *roxP* gene was successfully
193 knocked out.

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