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### ACCEPTED MANUSCR

# Impact of coated TiO<sub>2</sub>-nanoparticles used in sunscreens on two representative strains of the human microbiota: Effect of the particle surface nature and aging

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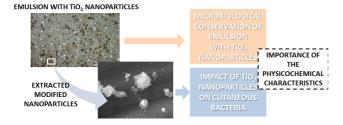
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- Surface properties of coated TiO<sub>2</sub>-nanoparticles evolved during aging in model emulsions
- Impact on skin bacteria evaluated through two exposure scenarios mimicking use conditions
- Hydrophobic nanoparticles modified the physicochemical characteristics of model emulsions
- Hydrophobic nanoparticles favored the development of potential pathogenic bacteria
- Importance of the polarity of nanoparticles was highlighted regarding their impact on bacteria

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- **Keywords:** TiO<sub>2</sub>-nanoparticles, cutaneous bacteria, bacteria growth, surface treatment, 23
- polarity, surface charge. 24

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