

iScience, Volume 24

Supplemental Information

**Antimicrobial and anti-adhesive properties
of carbon nanotube-based surfaces
for medical applications: a systematic review**

Rita Teixeira-Santos, Marisa Gomes, Luciana C. Gomes, and Filipe J. Mergulhão

SUPPLEMENTARY INFORMATION

TRANSPARENT METHODS

Search strategy, inclusion criteria and data extraction

This systematic review was conducted following the PRISMA statement (Preferred Reporting Items for Systematic reviews and Meta-Analysis) guidelines (Moher et al., 2009). The search was performed until 18 May 2020 in PubMed, Scopus, and Compendex libraries through the combination of the following keywords: “carbon nanotubes”, “antimicrobial”, “antifouling”, “adhesion”, “biofilm”, “antibiofilm” and “medical applications”. Peer-reviewed full-text articles in English published since January 2000 concerning the antimicrobial and anti-adhesive properties of CNTs with application in the medical field were assessed for eligibility. The adopted inclusion criteria for qualitative synthesis were as follows: (a) studies addressing the development of CNT composite films; (b) studies focused on the antimicrobial and/or anti-adhesive activities of CNT, alone or in association with other compounds. The exclusion criteria consisted in (a) articles that did not evaluate the antimicrobial activity of CNT composites; and (b) non-original articles.

Two reviewers (RTS and MG) independently applied the inclusion and exclusion criteria, and any differences were resolved by consensus.

Information regarding study design, CNT type (single- or multi-walled), CNT composites, surface materials, medical applications, pathogens, used methodologies and obtained outcomes were gathered.