

Might Cu(II) binding, DNA cleavage and radical production by YadA fragments be involved in the promotion of *F. nucleatum* related cancers?

Autorzy

Kamila Stokowa-Sołtys

Karolina Kierpiec

Robert Wieczorek

Rok wydania

2022

Czasopismo

Dalton Transactions

Numer woluminu

51

Strony

7040-7052

DOI

10.1039/d2dt00328g

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

In many cases, human microbiota are associated with cancer progression. It was concluded that *Fusobacterium nucleatum* increases neoplastic changes. This bacterium is naturally present in human dental plaque. However, if it is present in the colon, it becomes a precursor of cancer. Antibiotic treatment of mice infected with *F. nucleatum* slowed tumor growth, which agrees with the fundamental role of bacteria in tumorigenesis. Remarkably, recent studies indicate that transition metal complexes with fragments of outer membrane proteins are able to promote reactive oxygen species (ROS) formation and are responsible for oxidative stress, which consequently leads to cell damage. Therefore, in this paper, the formation of copper(II) complexes with fragments of adhesin YadA from *F. nucleatum* is characterized. Moreover, the ability of the complexes to produce ROS has been shown. Importantly, free ligands are efficient DNA-cleaving agents.

Adres publiczny

<http://dx.doi.org/10.1039/d2dt00328g>

Strona internetowa wydawcy

<https://www.rsc.org/>