

# 2<sup>nd</sup> International Conference on Bioprocess for Sustainable Environment and Energy

**ICBSEE-India-2020**



**March 5-7, 2020**



*Organized  
by*

**Department of Biotechnology and  
Medical Engineering  
NIT Rourkela, 769008  
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## Essential oil components targeting FtsZ divisome protein: A review

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### Abstract

FtsZ proteins are the bacterial homologues of tubulin and are essential for bacterial cell division. At least nine proteins, FtsZ, FtsA, FtsI (PBP3), FtsK, FtsL, FtsN, FtsQ, FtsW, and ZipA, have been shown to be essential components during division process. Among these, FtsZ plays a key role, as it initiates cell division by forming a ring-like structure and invaginating the cell wall circumferentially at the prospective division site. Natural products remain the main sources of lead compounds, especially for the development of chemotherapeutic drugs. Here and now, a set of active constituents of bioactive essential oils belonging to various groups of chemotypes were selected and evaluated for their respective 'druggability' and 'druglikeness' using various bioinformatics tools. A review work was made on the aspects of pros and cons of essential oil components targeting FtsZ and its recruited proteins, considering *in vitro*, *in silico* and *in vivo* studies. It was concluded that essential oil derived alkaloids are the most promising candidates in targeting the FtsZ protein.