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**MUTAGENIC ACTIVITY OF BIOCHARS OBTAINED
FROM PYROLYSIS BIOREFINERY PROCESSES IN
Salmonella typhimurium TA100 AND TA 98 TESTER STRAINS
WITH AND WITHOUT METABOLIC S9 MIX ACTIVATION**

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Abstract

It is growing number of recent development in technologies and procedures within industrial biorefinery and bioenergy processes that can benefit society by significant improvement in procedures within chain of smart waste disposal and sustainable agriculture. Biochar as one important by-product of biorefinery processes. Its production and applications are emerging globally as novel industrial and commercial sector, however, the quality and chemical properties of such products will depend on the processes employed and the compositions of the substrates used. It is of high importance to develop and validate series of suitable protocols for the ecological monitoring of quality and properties of pyrolysis products named as “BIOCHARS”, and to initiate an establishment regulatory constrains and procedures which required to be implemented in product characterization chain. Here, we examined suitability of Ames test to analyse mutagenic activity of DMSO biochar extracts using two bacterial models (*S. typhimurium* strains TA 98 and TA 100) and established which tester strain which is most sensitive to recovered mutagenic compounds and condition of metabolic activation (S9). Developed testing protocols as described can be well suitable for further studies to ensure sensitive screening and detection of the mutagenic residuals within the other type biochar products produced on research and industrial scale.
