## **Supplementary File**

## Investigation of free radicals and carbon structures in chars generated from pyrolysis of antibiotic fermentation residue

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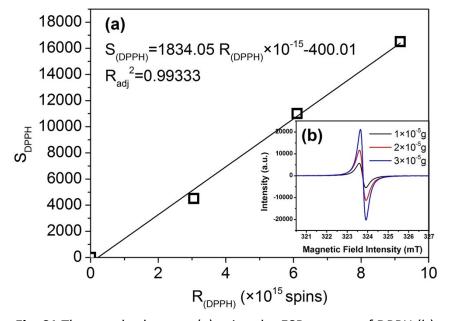


Fig. S1 The standard curves (a) using the ESR spectra of DPPH (b)