Table S3 Identification of chemical bonding by high resolution XPS for DHI-DHICA-melanin (Figure S8 and S9).

|  |  |  |  |
| --- | --- | --- | --- |
| Orbital of the atom | Binding Energy (eV) | Identification | Relative Atomic % (at%) |
| DHI-DHICA-melaninbefore exposure to H2O2 | DHI-DHICA-melaninafter exposure to H2O2 |
| C 1s | 284.6  | C=C  | 26.0  | 16.3  |
| 285.0  | C-C  | 10.6  | 10.9  |
| 285.5  | C-N  | 11.7  | 12.0  |
| 286.5  | C-O  | 8.6  | 10.9  |
| 287.7  | C=O  | 4.4  | 6.3  |
| 288.8  | O-C=O  | 3.5  | 4.1  |
| 290.7  | π→π\* of C=C  | 0.3  | 0.2  |
| N 1s | 398.5  | C=N | 0.4  | 0.7  |
| 400.2  | C-N | 5.3  | 5.1  |
| O 1s | 531.3  | C=O  | 5.6  | 6.3  |
|  | 531.6  | O\*=C-O  | 4.8  | 4.1  |
|  | 532.3  | C-OH aliphatic | 7.8  | 10.3  |
|  | 533.0  | O=C-O\*  | 4.9  | 4.1  |
|  | 533.6  | C-OH aromatic  | 5.4  | 7.2  |
|  | 535.5  | H2O  | 0.7  | 1.3  |

\*Indicates that the identification pertains to this atom.