

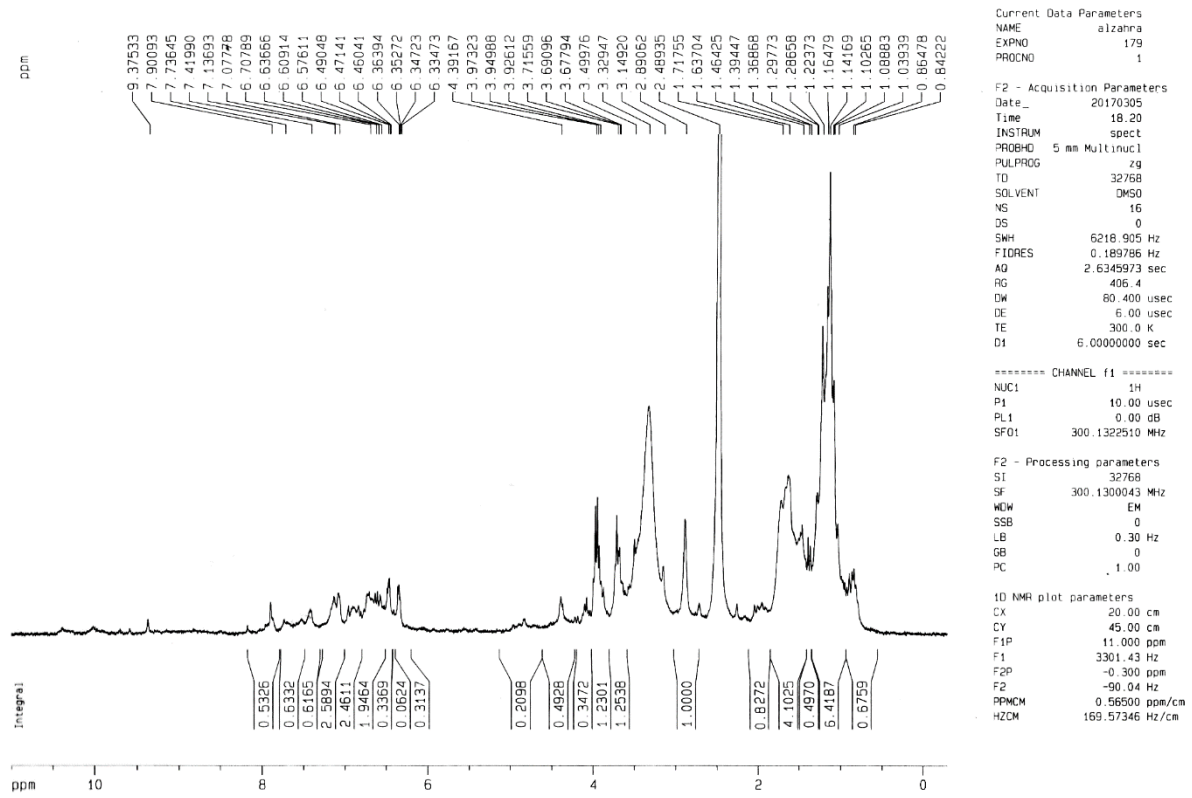
**Metal-bio functionalized bismuthmagnetite [Fe<sub>3-x</sub>Bi<sub>x</sub>O<sub>4</sub>/SiO<sub>2</sub>@L-ArgEt<sub>3</sub><sup>+</sup>I<sup>-</sup>/Zn(II)]: A novel bionanocomposite for the synthesis of 1,2,4,5-tetrahydro-2,4-dioxobenzo[*b*][1,4]diazepin malononitriles and malonamides at room temperature and under sonic waves**

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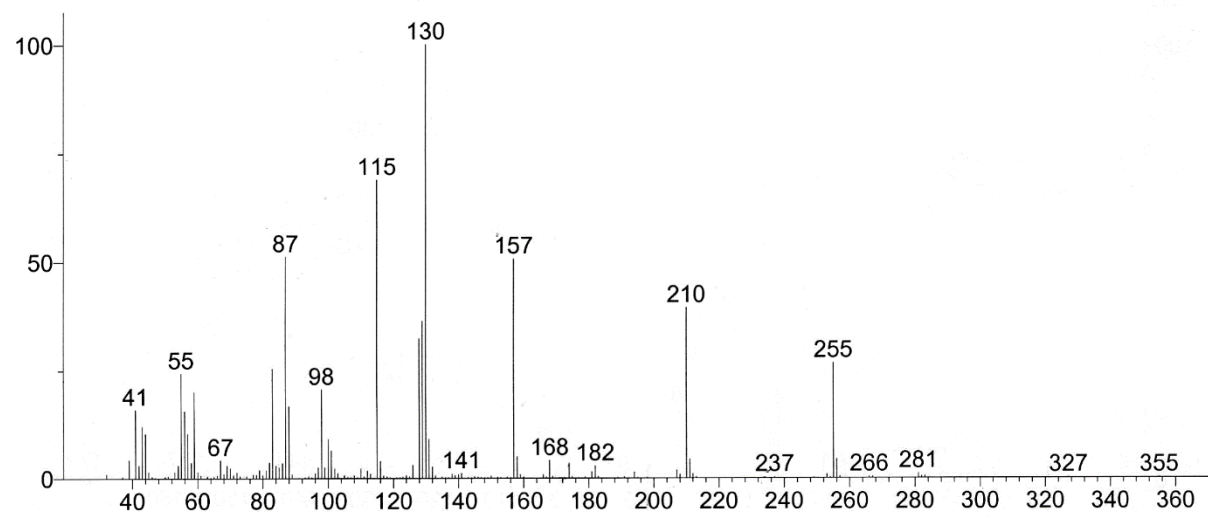
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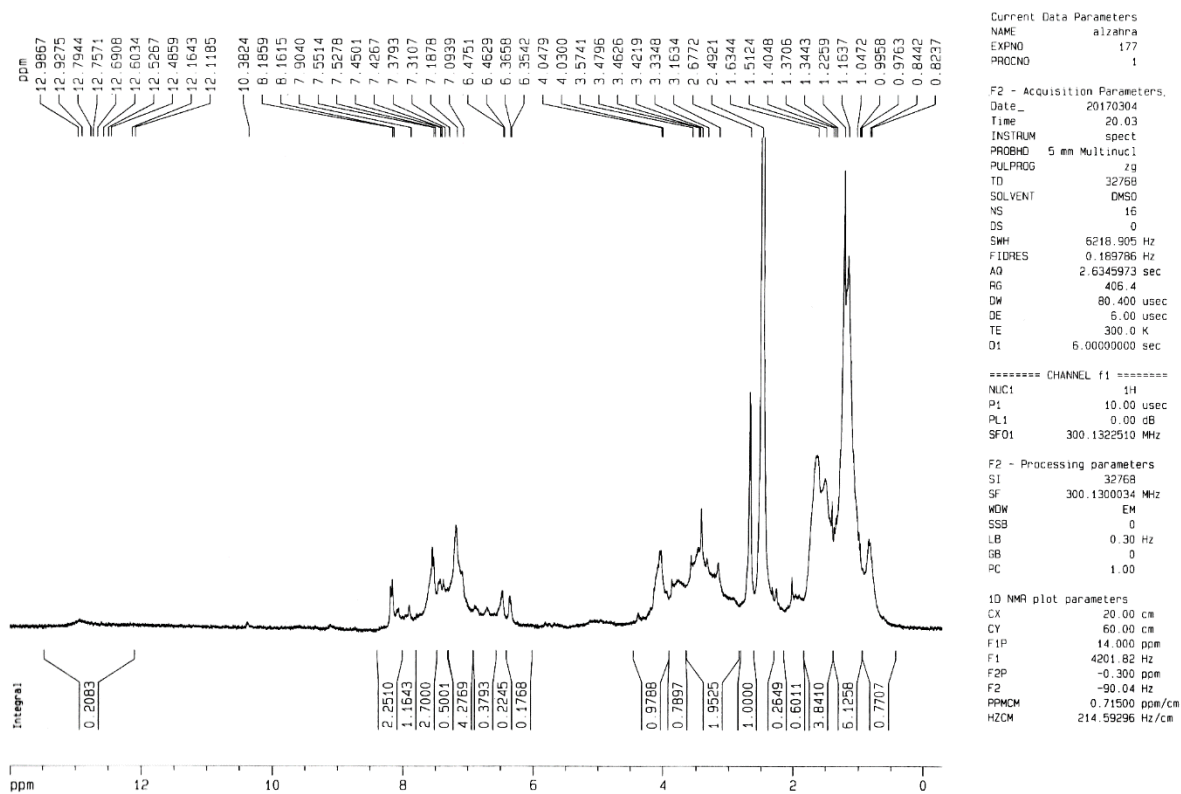
- S1.** <sup>1</sup>H NMR (DMSO, *d*<sub>6</sub>) spectra of 2-(2-(Cyclohexylamino)-2-(2,4-dioxo-4,5-dihydro-1*H*-benzo[*b*][1,4]diazepin-3(2*H*)-ylidene)-1-(4-hydroxy-3-methoxyphenyl)ethyl)malononitrile (**6e**)
- S2.** GC-MASS spectra of 2-(2-(Cyclohexylamino)-2-(2,4-dioxo-4,5-dihydro-1*H*-benzo[*b*][1,4]diazepin-3(2*H*)-ylidene)-1-(4-hydroxy-3-methoxyphenyl)ethyl)malononitrile (**6e**)
- S3.** <sup>1</sup>H NMR (DMSO, *d*<sub>6</sub>) spectra of 2-(2-(Cyclohexylamino)-2-(2,4-dioxo-4,5-dihydro-1*H*-benzo[*b*][1,4]diazepin-3(2*H*)-ylidene)-1-(4-formylphenyl)ethyl)malononitrile (**6f**)
- S4.** GC-MASS spectra of 2-(2-(Cyclohexylamino)-2-(2,4-dioxo-4,5-dihydro-1*H*-benzo[*b*][1,4]diazepin-3(2*H*)-ylidene)-1-(4-formylphenyl)ethyl)malononitrile (**6f**)
- S5.** <sup>1</sup>H NMR (DMSO, *d*<sub>6</sub>) spectra of *N*<sup>1</sup>,*N*<sup>3</sup>-bis(4-aminophenyl)-2-(3,3-dicyano-1-(cyclohexylamino)-2-(1*H*-indol-3-yl)propylidene)malonamide (**7f**)
- S6.** GC-MASS spectra of *N*<sup>1</sup>,*N*<sup>3</sup>-bis(4-aminophenyl)-2-(3,3-dicyano-1-(cyclohexylamino)-2-(1*H*-indol-3-yl)propylidene)malonamide (**7f**)



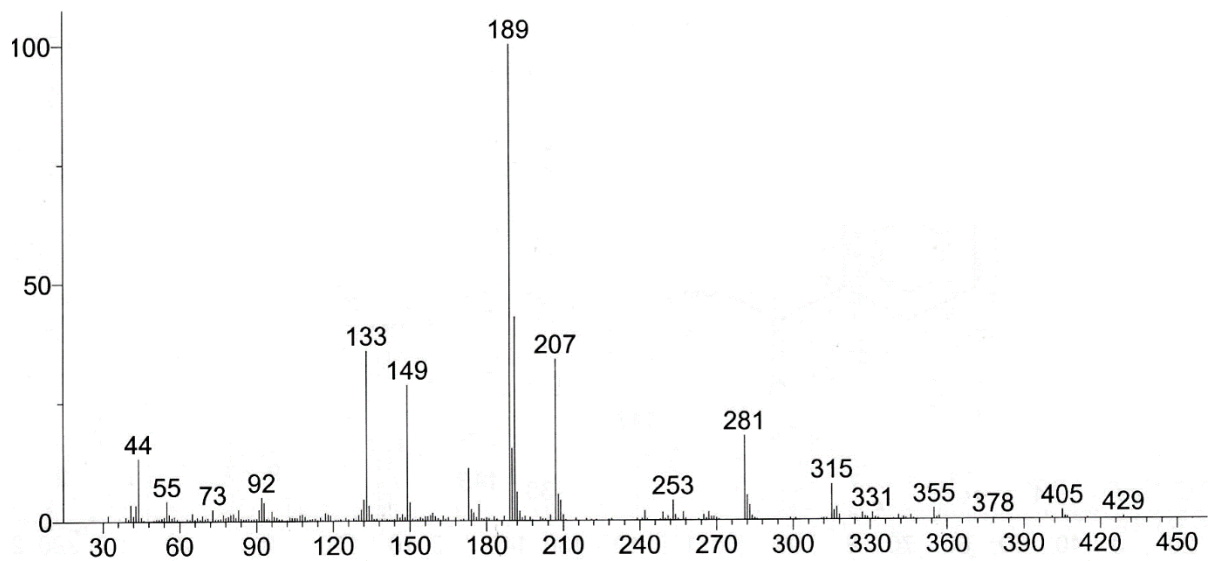
S1. <sup>1</sup>H NMR (DMSO, *d*<sub>6</sub>) spectra of (6e)



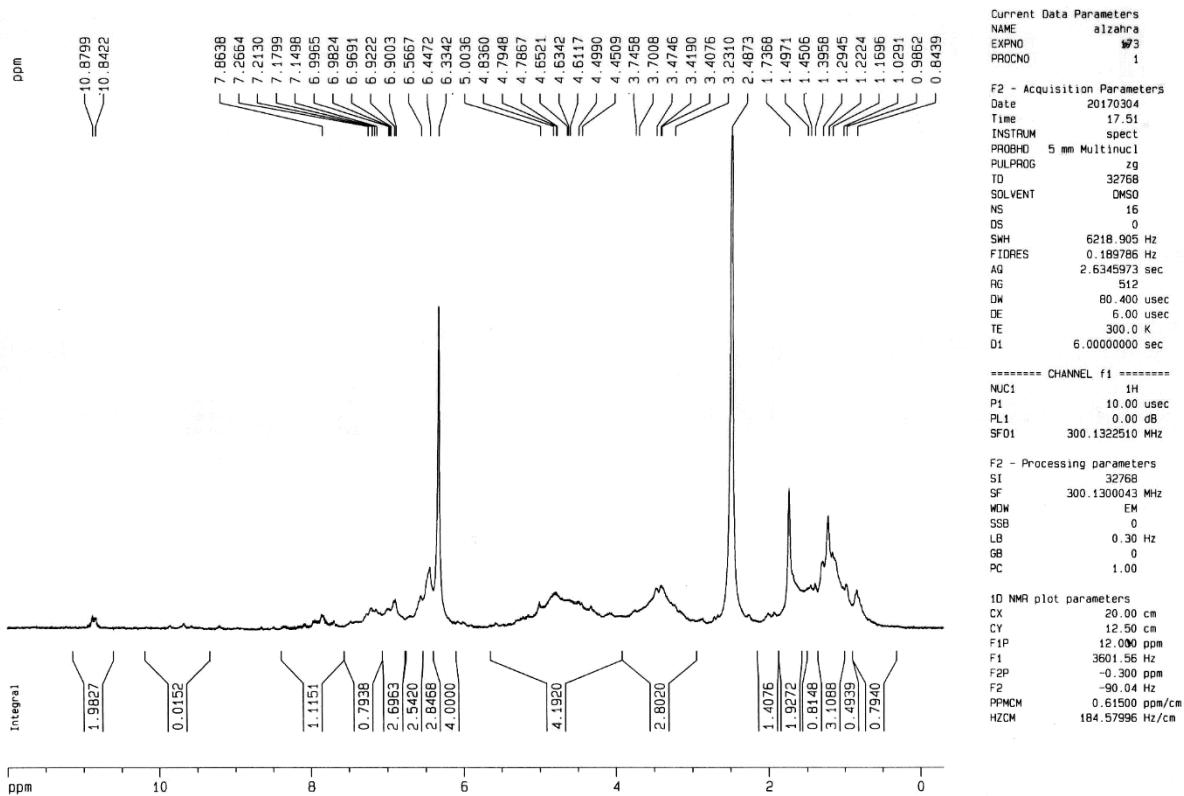
S2. GC-MASS spectra of (6e)



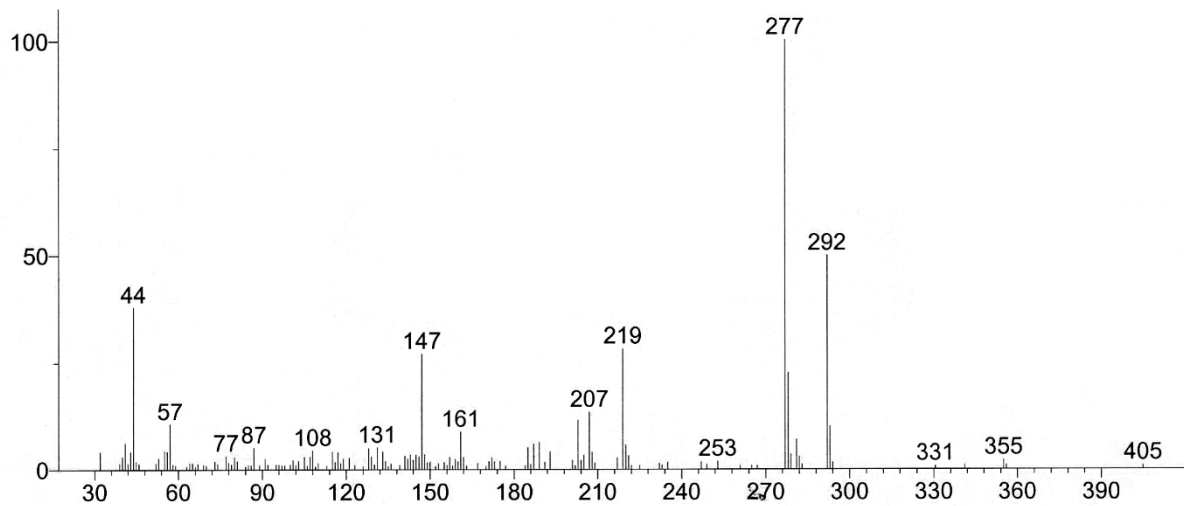
S3.  $^1\text{H}$  NMR (DMSO,  $d_6$ ) spectra of (6f)



S4. GC-MASS spectra of (6f)



S5. <sup>1</sup>H NMR (DMSO, *d*<sub>6</sub>) spectra of (7f)



S6. GC-MASS spectra of (7f)