

## Supporting Information

### **Immobilization of trypsin on superparamagnetic nanoparticles for rapid and effective proteolysis**

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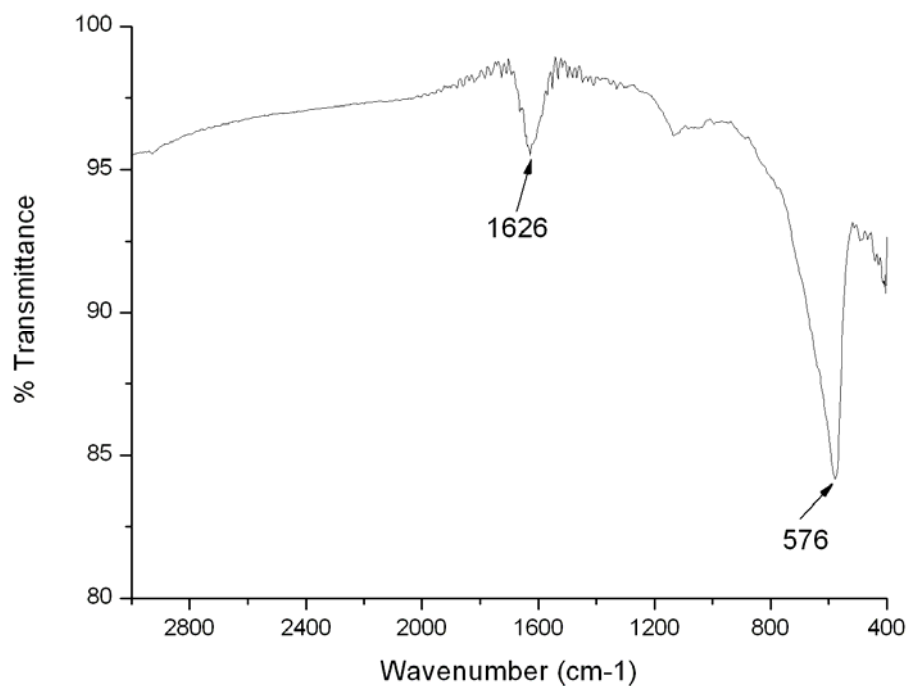
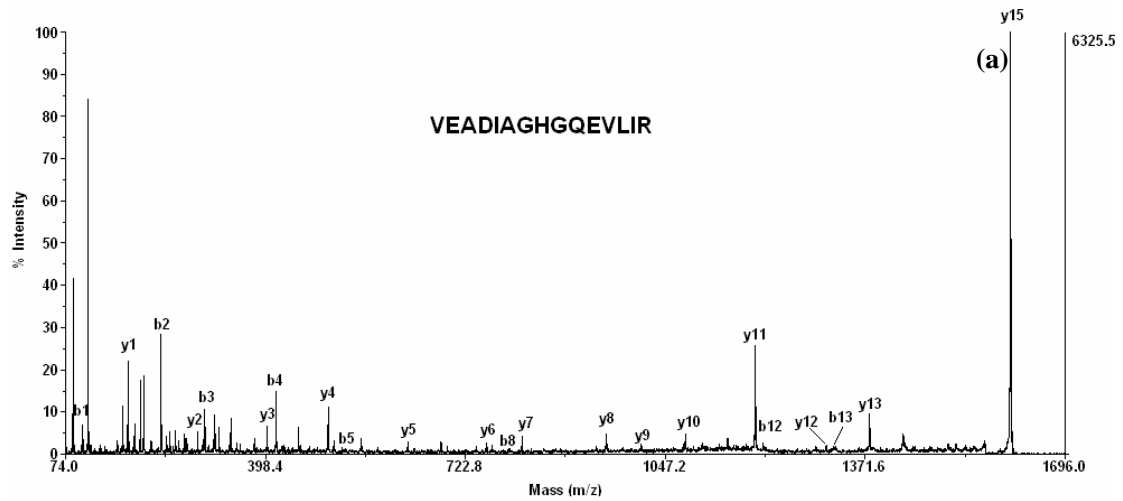
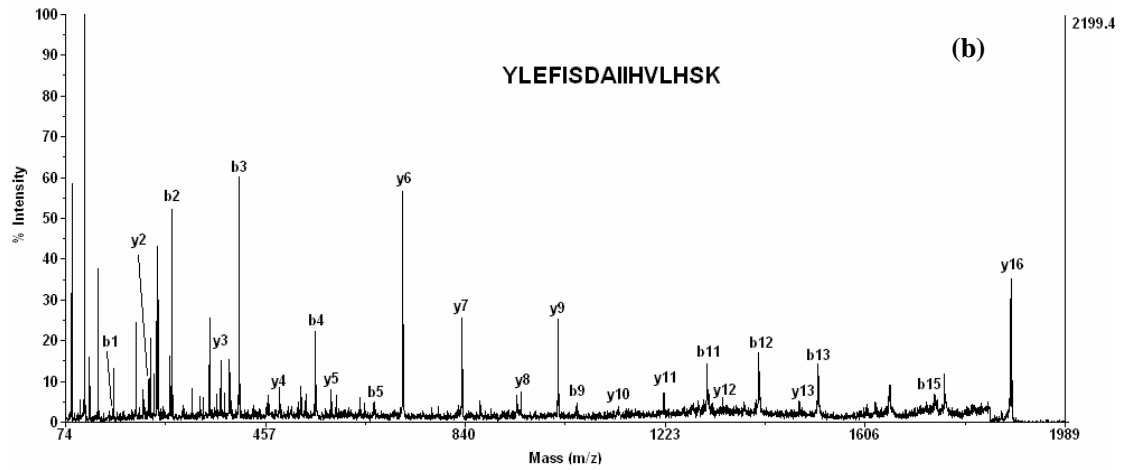


Figure S1. FT-IR spectra of amine-functionalized magnetic nanoparticles, from which absorption peaks at  $1626\text{ cm}^{-1}$  assigned to the free  $\text{-NH}_2$  group were observed, confirming the magnetic nanocrystals have been functionalized with amino groups in the synthetic process.



b	<u>100.08</u>	<u>229.12</u>	<u>300.16</u>	<u>415.18</u>	<u>528.27</u>	599.30	656.33	<u>793.38</u>	850.46	978.46	1107.51	<u>1206.57</u>	<u>1319.66</u>	<u>1432.74</u>	<u>1588.84</u>
	V	E	A	D	I	A	G	H	G	Q	E	V	L	I	R
y	<u>1606.85</u>	<u>1507.79</u>	<u>1378.74</u>	<u>1307.71</u>	<u>1192.68</u>	<u>1079.56</u>	<u>1008.56</u>	<u>951.54</u>	<u>814.48</u>	<u>757.46</u>	<u>629.40</u>	<u>500.36</u>	<u>401.29</u>	<u>288.20</u>	<u>175.12</u>



b	<u>164.07</u>	<u>277.15</u>	<u>406.20</u>	<u>553.27</u>	<u>666.35</u>	<u>753.38</u>	868.41	939.45	<u>1052.53</u>	1165.61	<u>1302.67</u>	<u>1401.74</u>	<u>1514.83</u>	1651.88	<u>1738.92</u>	<u>1867.01</u>
	Y	L	E	F	I	S	D	A	I	I	H	V	L	H	S	K
y	<u>1885.02</u>	1721.96	1608.87	<u>1479.83</u>	<u>1332.76</u>	<u>1219.68</u>	<u>1132.65</u>	<u>1017.62</u>	<u>946.58</u>	<u>833.50</u>	<u>720.42</u>	<u>583.36</u>	<u>484.29</u>	<u>371.20</u>	<u>234.14</u>	147.11

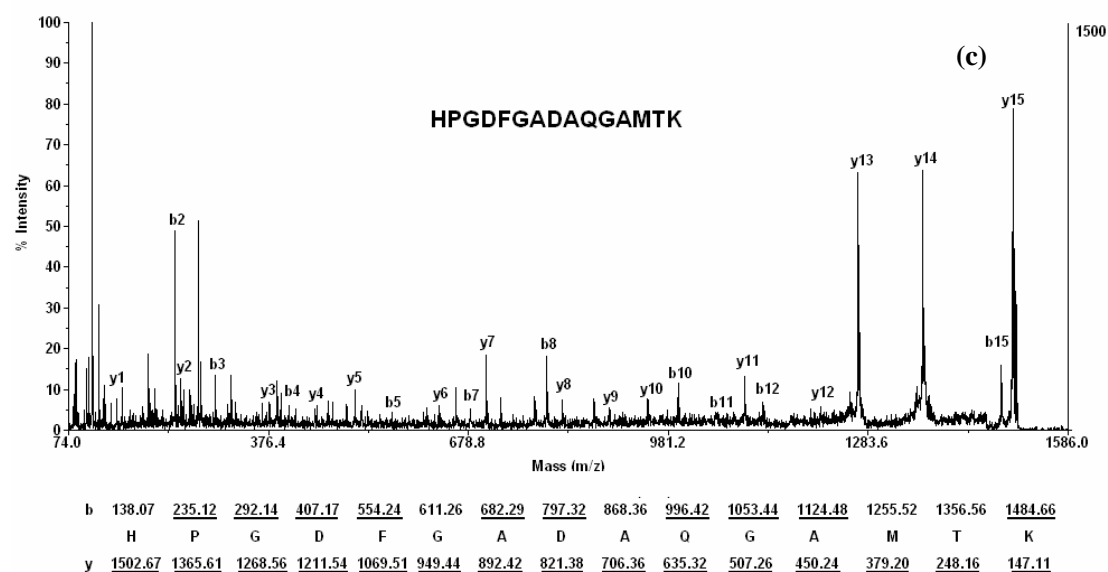


Figure S2. MS/MS spectra of precursor ions of (a) 1606.85, (b) 1885.02 and (c) 1502.67 marked with asterisk in Figure 3(a). Amino acid sequences are confirmed from the labeled b- and y-ions in the spectra. Fragments observed in the spectra are underlined and assigned.