

Supplementary Table S5. GSVA results of different clusters based on ferroptosis regulators.

| id   | logFC                | AveE<br>xpr          | t                    | P.Va<br>lue       | adj.P.<br>Val       | B                    |
|--|----------------------|----------------------|----------------------|-------------------|---------------------|----------------------|
| GO_IRON_ION_TRANSMEMBR<br>ANE_TRANSPORTER_ACTIVIT<br>Y | -0.151<br>74780<br>6 | -0.032<br>80850<br>2 | -7.800<br>37471<br>9 | 5.13<br>E-14      | 1.23E<br>-12        | 21.17<br>20648<br>3  |
| GO_IRON_IMPORT_INTO_CEL<br>L                           | -0.106<br>39064<br>8 | -0.002<br>77926<br>6 | -5.283<br>96045<br>7 | 2.05<br>E-07      | 4.72E<br>-06        | 6.392<br>78138<br>3  |
| GO_IRON_ION_TRANSMEMBR<br>ANE_TRANSPORT                | -0.081<br>93021<br>1 | -0.022<br>07998<br>2 | -4.899<br>24730<br>3 | 1.39<br>E-06      | 3.05E<br>-05        | 4.560<br>42007       |
| GO_IRON_ION_HOMEOSTASIS                                | -0.049<br>65619<br>5 | -0.012<br>14308<br>7 | -4.769<br>26657<br>3 | 2.57<br>E-06      | 5.14E<br>-05        | 3.969<br>10112<br>9  |
| HALLMARK_HEME_METABO<br>LISM                           | -0.039<br>37809<br>7 | -0.018<br>27525<br>6 | -4.558<br>57509<br>4 | 6.80<br>E-06      | 0.000<br>1292<br>15 | 3.040<br>91283       |
| GO_CELLULAR_IRON_ION_H<br>OMEOSTASIS                   | -0.049<br>95084<br>9 | -0.011<br>24866<br>4 | -4.521<br>61250<br>1 | 8.04<br>E-06      | 0.000<br>1446<br>52 | 2.881<br>97467<br>1  |
| GO_RESPONSE_TO_IRON_ION                                | -0.039<br>20397<br>7 | -0.004<br>51198<br>2 | -3.157<br>06768<br>6 | 0.00<br>1711      | 0.029<br>0862<br>5  | -2.143<br>50801<br>9 |
| GO_HEME_TRANSPORT                                      | 0.052<br>71007<br>4  | -0.021<br>23043<br>4 | 2.869<br>42508<br>3  | 0.00<br>4324<br>1 | 0.069<br>1857<br>96 | -2.987<br>04986<br>6 |
| GO_IRON_ION_BINDING                                    | 0.022<br>73845<br>8  | 0.005<br>52527<br>8  | 2.836<br>30765<br>8  | 0.00<br>4789<br>2 | 0.071<br>8380<br>53 | -3.079<br>21301<br>2 |
| GO_2_IRON_2_SULFUR_CLUS<br>TER_BINDING                 | -0.055<br>60337<br>3 | -0.033<br>35553<br>4 | -2.767<br>40883<br>4 | 0.00<br>5905<br>3 | 0.082<br>6747<br>15 | -3.267<br>65479<br>6 |
| GO_4_IRON_4_SULFUR_CLUS<br>TER_BINDING                 | -0.042<br>06922<br>6 | -0.040<br>57475<br>8 | -2.670<br>02155<br>7 | 0.00<br>7885      | 0.102<br>5053<br>55 | -3.526<br>39454<br>8 |
| HEME_BIOSYNTHETIC_PRO<br>CESS                          | 0.043<br>46301<br>9  | -0.022<br>97780<br>1 | 2.540<br>07442<br>3  | 0.01<br>1449<br>6 | 0.137<br>3955<br>16 | -3.857<br>68606      |
| GO_IRON_ION_TRANSPORT                                  | -0.025<br>25655<br>2 | -0.010<br>05679<br>7 | -2.352<br>62948<br>8 | 0.01<br>9111<br>2 | 0.210<br>2235<br>86 | -4.307<br>31595<br>2 |

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|--|----------------------|----------------------|----------------------|-------------------|---------------------|----------------------|
| GO_IRON_COORDINATION_ENTITY_TRANSPORT            | 0.033<br>39445<br>4  | -0.011<br>29414<br>9 | 2.013<br>57551<br>4  | 0.04<br>4704<br>6 | 0.447<br>0457<br>67 | -5.035<br>20284<br>6 |
| GO_IRON_SULFUR_CLUSTER_ASSEMBLY                  | -0.041<br>01706<br>5 | -0.044<br>43196<br>8 | -1.985<br>64123<br>6 | 0.04<br>7736<br>4 | 0.447<br>0457<br>67 | -5.090<br>23801<br>9 |
| REACTOME_IRON_UPTAKE_AND_TRANSPORT               | -0.023<br>48238<br>3 | -0.018<br>46199<br>5 | -1.882<br>21738<br>1 | 0.06<br>0511<br>8 | 0.484<br>0946<br>87 | -5.287<br>42980<br>2 |
| MODULE_540                                       | -0.031<br>91722<br>9 | 0.009<br>79101<br>4  | -1.619<br>65976<br>7 | 0.10<br>6071<br>4 | 0.742<br>4996<br>42 | -5.741<br>39113<br>5 |
| GO_SEQUESTERING_OF_IRON_ION                      | 0.039<br>76274<br>3  | 0.038<br>01392<br>7  | 1.460<br>41829<br>2  | 0.14<br>4938<br>1 | 0.869<br>6287<br>31 | -5.983<br>97154<br>4 |
| GO_PROTOPORPHYRINOGEN_IX_METABOLIC_PROCESS       | -0.021<br>98736<br>6 | -0.029<br>50884<br>2 | -1.281<br>83685<br>2 | 0.20<br>0621<br>5 |                     | -6.226<br>46520<br>3 |
| GO_MULTICELLULAR_ORGANISMAL_IRON_ION_HOMEOSTASIS | -0.011<br>79971<br>9 | 0.011<br>67252<br>4  | -0.570<br>46656<br>6 | 0.56<br>8672<br>6 |                     | -6.880<br>38103<br>5 |
| GO_HEME_METABOLIC_PROCESS                        | 0.005<br>97792<br>9  | -0.018<br>41618<br>6 | 0.502<br>22331<br>3  | 0.61<br>5779      | 1                   | -6.916<br>77134<br>8 |
| GO_REGULATION_OF_IRON_ION_TRANSPORT              | -0.007<br>27925<br>1 | 0.010<br>47250<br>5  | -0.319<br>11866<br>8 | 0.74<br>9798<br>4 | 1                   | -6.991<br>55282<br>8 |
| GO_CELLULAR_RESPONSE_TO_IRON_ION                 | -0.004<br>81431      | -0.013<br>34997<br>3 | -0.276<br>27120<br>9 | 0.78<br>2478<br>5 | 1                   | -7.004<br>24075<br>5 |

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