

Identification of cadaveric liver tissues using thanatotranscriptome biomarkers

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Table S1. Tissue Specificity of Read Counts of 46 Gene Biomarkers in Italian Cases

| | | Postmortem Interval (PMI) | | | | | | | | | | | | | | | | | |
|-----------------|----------|---------------------------|---------|---------|-----------|---------|--------|---------|-----------|-------|---------|--------|---------|--------|--------|-------|--------|---------|-------|
| Gene Name | | 38hr | 42hr | 48hr | 50hr | 60hr | 60hr | 65hr | 72hr | 72hr | 80hr | 4d | 108hr | 5d | 144hr | 6d | 7d | 37d | |
| Brain | SNAP25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | RTN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | GABRA1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | OPALIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | GFAP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | NEUROD6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lung | SFTPB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | SFTPD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | SFTPA1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Trachea | BPIFB1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Liver | AMBP | 107441 | 68337 | 93613 | 675279 | 16121 | 24766 | 161803 | 178151 | 5824 | 104827 | 30196 | 10568 | 6404 | 33700 | 8913 | 0 | 61645 | |
| | F2 | 34146 | 6360 | 32084 | 147187 | 27338 | 6079 | 72986 | 75618 | 0 | 15209 | 19054 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | CFHR2 | 15520 | 2154 | 10796 | 20488 | 0 | 4432 | 11209 | 0 | 0 | 3231 | 3757 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | F9 | 0 | 0 | 5857 | 23521 | 989 | 0 | 7381 | 0 | 0 | 0 | 0 | 6984 | 0 | 0 | 0 | 0 | 0 | 6032 |
| | AHSG | 524477 | 202367 | 473793 | 1284572 | 81272 | 49107 | 353684 | 831523 | 542 | 246640 | 32828 | 93624 | 10885 | 40898 | 0 | 51560 | 254777 | |
| | C9 | 41351 | 19764 | 58902 | 35359 | 0 | 15476 | 0 | 0 | 0 | 8167 | 13178 | 0 | 0 | 0 | 0 | 0 | 0 | 24466 |
| | SPP2 | 18082 | 3982 | 8327 | 36191 | 0 | 0 | 11913 | 12283 | 2603 | 18070 | 0 | 1341 | 0 | 0 | 0 | 0 | 0 | 0 |
| MBL2 | 24361 | 23876 | 14268 | 78799 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Skeletal Muscle | TNNI2 | 0 | 0 | 8158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | MYLK2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | ATP2A1 | 0 | 0 | 0 | 0 | 0 | 0 | 9206 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | MYH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | NEB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | MYLPF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Heart | ITGB1BP3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | MYBPC3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | NPPB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | NPPA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | TNNI3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Kidney | UMOD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | SLC12A1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | SLC34A1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | SLC22A12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Adipose | TUSC5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | ADIPOQ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | PLIN1 | 0 | 6412 | 0 | 17621 | 0 | 0 | 0 | 0 | 0 | 6127 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Intestine | FABP6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | CCL25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | DEFA5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | DEFA6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | LCT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Stomach | PGA3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | PGA4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | GIF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | GKN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | PGA5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Average Total | | 765,378 | 333,252 | 705,798 | 2,319,017 | 125,720 | 99,860 | 628,182 | 1,097,575 | 8,969 | 402,271 | 99,013 | 112,517 | 17,289 | 74,598 | 8,913 | 51,560 | 346,920 | |

Average read counts of liver biomarker in Italian liver tissue samples (calculated from N=17 cases). For each donor liver tissue, the average total read counts are listed. Only samples with total read counts greater than 5000 were analyzed. Average read counts in red indicate read counts for biomarkers representing tissues from other organs.

Table S2. Tissue Specificity of Read Counts of 46 Gene Biomarkers in United States Cases

| Postmortem Interval (PMI) | | | | | | | | | | | |
|---------------------------|-----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Gene Name | 3.5hr | 6hr | 9hr | 13hr | 15hr | 17hr | 20.5hr | 22hr | 29.5hr | 32hr |
| Brain | SNAP25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | RTN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GABRA1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | OPALIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GFAP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NEUROD6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Lung | SFTPB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SFTPD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SFTPA1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trachea | BPIFB1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Liver | AMBP | 3400 | 23637 | 9619 | 17204 | 4083 | 28850 | 24170 | 26111 | 11409 | 4522 |
| | F2 | 885 | 2906 | 1627 | 2239 | 1904 | 3029 | 3209 | 1425 | 2148 | |
| | CFHR2 | 0 | 0 | 0 | 514 | 0 | 1677 | 2340 | 0 | 0 | 0 |
| | F9 | 0 | 632 | 0 | 0 | 0 | 839 | 1536 | 0 | 0 | 0 |
| | AHSG | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | C9 | 0 | 1824 | 1888 | 1427 | 0 | 3498 | 3505 | 992 | 513 | 0 |
| | SPP2 | 2843 | 27518 | 11314 | 22050 | 9967 | 59891 | 56872 | 16416 | 8132 | 5444 |
| MBL2 | 0 | 0 | 3569 | 3127 | 838 | 0 | 541 | 774 | 686 | 801 | |
| Skeletal Muscle | TNNI2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MYLK2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ATP2A1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MYH2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | NEB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MYLPF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Heart | ITGB1BP3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MYBPC3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | NPPB | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | NPPA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | TNNI3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kidney | UMOD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SLC12A1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SLC34A1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | SLC22A12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adipose | TUSC5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ADIPOQ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | PLIN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intestine | FABP6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | CCL25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | DEFA5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | DEFA6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6169 |
| | LCT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4042 |
| Stomach | PGA3 | 0 | 0 | 598 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | PGA4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GIF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | GKN1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | PGA5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average Total | | 7,128 | 56,517 | 28,615 | 46,561 | 16,792 | 97,784 | 92,173 | 45,718 | 22,888 | 20,978 |

Average read counts of liver biomarker in American liver tissue samples (calculated from N=10 donors). For each donor liver tissue, the average total read counts are listed. Only samples with total read counts greater than 5000 were analyzed. Average read counts in red indicate read counts for biomarkers representing tissues from other organs.