**Suppl Table 1. Proteins detected in mouse jejuna following exposure to TBI.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Protein | **TBI : NT** | **p-value** | **Control Studies Agree?** | **Appears in Drug Study?** | **Drug Restored?** |
| 14-3-3 protein zeta/delta | -1.9 | 0.047 | Yes | Yes | Yes |
| -1.7 | 0.002 |
| Actin, cytoplasmic 2 | -1.5 | 0.000 | Yes | Yes | Yes |
| -1.4 | 0.014 |
| Annexin A2 | 1.6 | 0.003 | Yes | No |  |
| 1.3 | 0.012 |
| Calcium-activated chloride channel regulator 1 | 1.9 | 0.001 | Yes | No |  |
| 1.9 | 0.000 |
| Cofilin-1 | -2.6 | 0.005 | Yes | No |  |
| -2.5 | 0.007 |
| Desmin | 2.2 | 0.000 | Yes | Yes | Yes |
| 3.7 | 0.001 |
| Dihydropyrimidinase-related protein 2 | 1.4 | 0.008 | Yes | Yes | Yes |
| 1.7 | 0.003 |
| Cytochrome b5 | n/a | n/a | ND | Yes | Yes |
| -1.3 | 0.082 |
| Elongation factor 2 | 1.2 | 0.039 | Yes | Yes | Yes |
| 1.8 | 0.000 |
| Ezrin | 2.0 | 0.001 | Yes | Yes | Yes |
| 2.4 | 0.001 |
| Fatty acid-binding protein, liver | -6.4 | 0.013 | Yes | No |  |
| -2.0 | 0.002 |
| Galectin-4 | -2.1 | 0.002 | Yes | Yes | Yes |
| -1.8 | 0.028 |
| Gelsolin | 1.3 | 0.002 | Yes | No |  |
| 2.1 | 0.002 |
| Glutathione S-transferase Mu 1 | -1.5 | 0.019 | Yes | No |  |
| -1.7 | 0.043 |
| Heat shock protein HSP 90-beta | 1.3 | 0.044 | Yes | No |  |
| 1.8 | 0.000 |
| Keratin, type II cytoskeletal 8 | 2.6 | 0.000 | Yes | No |  |
| 1.2 | 0.011 |
| Leukocyte elastase inhibitor A | 2.7 | 0.002 | Yes | No |  |
| 1.7 | 0.019 |
| Peroxiredoxin-1 | -7.1 | 0.005 | Yes | Yes | Yes |
| -2.9 | 0.012 |
| Phosphoglycerate mutase 1 | -2.4 | 0.002 | Yes | Yes | Yes |
| -2.1 | 0.012 |
| Plastin-1 | 1.5 | 0.005 | Yes | Yes | Yes |
| 1.9 | 0.001 |
| Pyruvate kinase isozymes M1/M2 | 1.6 | 0.001 | No | No |  |
| -1.6 | 0.000 |
| Retinol-binding protein 2 | -1.5 | 0.011 | Yes | No |  |
| -1.9 | 0.016 |
| Serpin B6 | 1.6 | 0.001 | Yes | Yes | Yes |
| 1.9 | 0.001 |
| Transitional endoplasmic reticulum ATPase | 1.3 | 0.011 | Yes | No |  |
| 2.0 | 0.009 |
| Vacuolar protein-sorting-associated protein 25 | -4.1 | 0.000 | Yes | Yes | Yes |
| -2.5 | 0.005 |
| Villin-1 | 1.5 | 0.000 | Yes | No |  |
| 1.9 | 0.003 |

Notes: Average protein expression fold change ratio of irradiated to unirradiated mice. Control cohort of GT3 (n=6) expression ratio is followed by TS (n=3) in each column. Columns indicate whether protein was identified in the individual studies, and if so, whether the drug restored the heathy protein expression. NT = no treatment, ND = not detected

**Suppl Table 2. Jejuna proteins restored by TS treatment given before exposure to 11 Gy irradiation.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UniProt ID** | **P value** | **TBI : NT** | **P value** | **TBI : GT3** |
| **VILI\_MOUSE** | 0.000 | 1.5 | 0.000 | 2.1 |
| **EF2\_MOUSE** | 0.001 | -1.7 | 0.005 | -1.3 |
| **EZRI\_MOUSE** | 0.001 | 2.0 | 0.000 | 2.4 |
| **CLCA1\_MOUSE** | 0.000 | 1.9 | 0.000 | 2.4 |
| **PLSI\_MOUSE** | 0.005 | 1.5 | 0.000 | 2.2 |
| **TBB2C\_MOUSE** | 0.005 | 1.5 | 0.003 | 1.7 |
| **DESM\_MOUSE** | 0.000 | 2.2 | 0.000 | 1.7 |
| **EST5A\_MOUSE** | 0.017 | -1.9 | 0.013 | -2.0 |
| **PDIA3\_MOUSE** | 0.020 | -2.0 | 0.015 | -2.0 |
| **K2C8\_MOUSE** | 0.002 | 1.6 | 0.000 | 2.9 |
| **KPYM\_MOUSE** | 0.000 | -1.6 | 0.002 | -1.5 |
| **HS90A\_MOUSE** | 0.005 | -1.8 | 0.000 | -2.1 |
| **OAT\_MOUSE** | 0.002 | -1.5 | 0.002 | -1.3 |
| **SPB6\_MOUSE** | 0.001 | 1.6 | 0.000 | 1.7 |
| **ILEUA\_MOUSE** | 0.002 | 2.7 | 0.000 | 3.8 |
| **TALDO\_MOUSE** | 0.010 | -3.2 | 0.006 | -3.8 |
| **AK1CD\_MOUSE** | 0.023 | -1.5 | 0.028 | -1.4 |
| **HEM2\_MOUSE** | 0.043 | -3.6 | 0.020 | -5.6 |
| **GBLP\_MOUSE** | 0.044 | -1.8 | 0.024 | -2.2 |
| **1433Z\_MOUSE** | 0.002 | -1.7 | 0.000 | -2.3 |
| **K1C18\_MOUSE** | 0.000 | 2.3 | 0.004 | 2.1 |
| **PGAM1\_MOUSE** | 0.006 | -2.4 | 0.001 | -3.0 |
| **GSTM1\_MOUSE** | 0.019 | -1.5 | 0.012 | -1.6 |
| **K1C20\_MOUSE** | 0.017 | 1.7 | 0.035 | 1.6 |
| **K1C19\_MOUSE** | 0.000 | 1.8 | 0.000 | 3.3 |
| **ST1B1\_MOUSE** | 0.018 | -2.1 | 0.006 | -2.4 |
| **ASC\_MOUSE** | 0.000 | 1.7 | 0.000 | 1.9 |
| **PRDX1\_MOUSE** | 0.005 | -7.1 | 0.001 | -14.4 |
| **VPS25\_MOUSE** | 0.000 | -4.1 | 0.000 | -5.3 |
| **LEG4\_MOUSE** | 0.002 | -2.1 | 0.001 | -2.3 |
| **COF1\_MOUSE** | 0.005 | -2.6 | 0.017 | -2.4 |
| **RET2\_MOUSE** | 0.011 | -1.5 | 0.006 | -1.7 |
| **PPIA\_MOUSE** | 0.007 | -1.6 | 0.012 | -1.6 |
| **FABPL\_MOUSE** | 0.002 | -2.0 | 0.002 | -1.9 |

**Suppl Table 3. IPA analysis of proteins with statistically significant fold change of 1.5 or greater with the same directionality from mice treated with TS before 11 Gy irradiation.**

|  |  |
| --- | --- |
| **TS 11 Gy Jejuna, same directionality** | |
| **Top Canonical Pathways** | |
| Signaling by Rho Family GTPases | |
| Glycolysis I | |
| Xenobiotic Metabolism Signaling | |
| 14-3-3-mediated Signaling | |
| Retinol Biosynthesis | |
| **Top Diseases and Bio Functions** | |
| **Diseases and Disorders** | **Molecular and cellular functions** |
| Inflammatory Response | Cell Death and Survival |
| Cancer | Cell Morphology |
| Organismal Injury and Abnormalities | Cellular Assembly and Organization |
| Gastrointestinal Disease | Cellular compromise |
| Hepatic System Disease | Cellular Development |

**Suppl Table 4. Jejuna proteins restored by GT3 treatment given before exposure to 11 Gy irradiation.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UniProt ID** | P value | TBI : NT | P value | TBI : GT3 |
| **SPTN1\_MOUSE** | 0.013 | 1.7 | 0.045 | 1.4 |
| **VINC\_MOUSE** | 0.002 | 1.8 | 0.049 | 1.4 |
| **MYH11\_MOUSE** | 0.000 | 2.2 | 0.008 | 2.0 |
| **MVP\_MOUSE** | 0.004 | 1.6 | 0.021 | 1.3 |
| **VILI\_MOUSE** | 0.003 | 1.9 | 0.015 | 1.3 |
| **EF2\_MOUSE** | 0.008 | 1.6 | 0.008 | 1.6 |
| **FUBP2\_MOUSE** | 0.007 | 1.6 | 0.047 | 1.3 |
| **CLCA1\_MOUSE** | 0.001 | 1.9 | 0.005 | 1.4 |
| **GELS\_MOUSE** | 0.002 | 2.1 | 0.012 | 1.7 |
| **ADSV\_MOUSE** | 0.001 | 1.8 | 0.013 | 1.4 |
| **EZRI\_MOUSE** | 0.001 | 2.4 | 0.001 | 1.9 |
| **PLSI\_MOUSE** | 0.001 | 1.9 | 0.011 | 1.6 |
| **ALBU\_MOUSE** | 0.036 | 1.5 | 0.004 | 1.8 |
| **AMPM2\_MOUSE** | 0.002 | 1.5 | 0.020 | 1.3 |
| **DPYL2\_MOUSE** | 0.003 | 1.7 | 0.003 | 1.7 |
| **TCPG\_MOUSE** | 0.001 | 1.5 | 0.008 | 1.4 |
| **TBA1C\_MOUSE** | 0.004 | 1.7 | 0.036 | 1.5 |
| **DESM\_MOUSE** | 0.001 | 3.7 | 0.006 | 2.7 |
| **K2C8\_MOUSE** | 0.000 | 2.6 | 0.012 | 1.6 |
| **CNDP2\_MOUSE** | 0.001 | 1.7 | 0.008 | 1.4 |
| **LIPP\_MOUSE** | 0.000 | -3.0 | 0.013 | -2.2 |
| **ARP3\_MOUSE** | 0.002 | 1.5 | 0.014 | 1.3 |
| **ACTG\_MOUSE** | 0.002 | 1.6 | 0.010 | 1.4 |
| **SPB6\_MOUSE** | 0.001 | 1.9 | 0.006 | 1.6 |
| **ILEUA\_MOUSE** | 0.019 | 1.7 | 0.026 | 1.5 |
| **ARGI2\_MOUSE** | 0.010 | -2.3 | 0.048 | -2.1 |
| **KCRU\_MOUSE** | 0.003 | -1.8 | 0.020 | -1.8 |
| **TPM1\_MOUSE** | 0.000 | 3.0 | 0.050 | 1.5 |
| **PDIA1\_MOUSE** | 0.006 | -2.1 | 0.024 | -2.0 |
| **TPM2\_MOUSE** | 0.002 | 1.9 | 0.022 | 1.7 |
| **BPNT1\_MOUSE** | 0.004 | -2.2 | 0.010 | -2.3 |
| **CBPA1\_MOUSE** | 0.000 | -5.2 | 0.040 | -2.5 |
| **ANXA2\_MOUSE** | 0.006 | -3.7 | 0.003 | -4.2 |
| **PSA1\_MOUSE** | 0.001 | -2.5 | 0.016 | -2.0 |
| **CEL3B\_MOUSE** | 0.003 | -4.2 | 0.025 | -2.7 |
| **PGAM1\_MOUSE** | 0.012 | -2.1 | 0.003 | -1.8 |
| **CAH3\_MOUSE** | 0.038 | -1.7 | 0.038 | -1.6 |
| **1433Z\_MOUSE** | 0.047 | -1.9 | 0.012 | -2.1 |
| **CTRB1\_MOUSE** | 0.001 | -8.6 | 0.011 | -6.7 |
| **GDIR1\_MOUSE** | 0.001 | -3.7 | 0.011 | -2.8 |
| **CHP1\_MOUSE** | 0.025 | -1.6 | 0.002 | -1.9 |
| **GPX1\_MOUSE** | 0.004 | -2.3 | 0.030 | -2.0 |
| **CYB5B\_MOUSE** | 0.000 | 1.7 | 0.006 | 1.5 |
| **MYL9\_MOUSE** | 0.001 | 2.6 | 0.034 | 1.9 |
| **PRDX1\_MOUSE** | 0.012 | -2.9 | 0.021 | -2.4 |
| **VPS25\_MOUSE** | 0.005 | -2.5 | 0.012 | -2.3 |
| **MMP7\_MOUSE** | 0.016 | -2.6 | 0.050 | -2.9 |
| **MDHC\_MOUSE** | 0.016 | -1.5 | 0.027 | -1.5 |
| **LEG4\_MOUSE** | 0.028 | -1.8 | 0.028 | -1.9 |
| **IF5A1\_MOUSE** | 0.018 | -2.4 | 0.029 | -2.2 |
| **AP4A\_MOUSE** | 0.001 | -2.4 | 0.006 | -2.4 |
| **TBB2A\_MOUSE** | 0.007 | -3.6 | 0.022 | -3.0 |

**Suppl Table 5. IPA analysis of proteins with statistically significant fold change of 1.5 or greater with the same directionality from mice treated with GT3 before 11 Gyirradiation.**

|  |  |
| --- | --- |
| **GT3 11 Gy Jejuna, same directionality** | |
| **Top Canonical Pathways** | |
| Calcium Signaling | |
| Actin Cytoskeleton Signaling | |
| Epithelial Adherens Junction Signaling | |
| RhoGDI Signaling | |
| Agranulocyte Adhesion and Diapedesis | |
| **Top Diseases and BioFunctions** | |
| **Diseases and Disorders** | **Molecular and cellular functions** |
| Inflammatory Response | Cell Death and Survival |
| Dermatological Diseases and Conditions | Cellular Development |
| Hematological Disease | Cellular Growth and Proliferation |
| Metabolic Disease | Cell Signaling |
| Organismal Injury and Abnormalities | Post Translational Modification |