

Supplement Table S1:

The top 20 KEGG pathways of dysfunctional mRNAs

| Pathway term | Rich factor | Q value | Gene number |
|---|-------------|-------------|-------------|
| Chronic myeloid leukemia | 0.536231884 | 0.21491223 | 37 |
| Prostate cancer | 0.505882353 | 0.21491223 | 43 |
| Notch signaling pathway | 0.590909091 | 0.21491223 | 26 |
| Acute myeloid leukemia | 0.555555556 | 0.21491223 | 30 |
| Thyroid hormone signaling pathway | 0.451327434 | 0.227748452 | 51 |
| Protein processing in endoplasmic reticulum | 0.413580247 | 0.227748452 | 67 |
| Epstein-Barr virus infection | 0.402116402 | 0.227748452 | 76 |
| Ubiquitin mediated proteolysis | 0.425373134 | 0.227748452 | 57 |
| mRNA surveillance pathway | 0.464285714 | 0.227748452 | 39 |
| Hippo signaling pathway | 0.420289855 | 0.227748452 | 58 |
| Pathways in cancer | 0.369905956 | 0.227748452 | 118 |
| Lysine degradation | 0.52 | 0.24312213 | 26 |
| Cell cycle | 0.426086957 | 0.252596335 | 49 |
| AMPK signaling pathway | 0.423728814 | 0.252596335 | 50 |
| Adherens junction | 0.464788732 | 0.263236493 | 33 |
| Endocytosis | 0.383495146 | 0.263236493 | 79 |
| Hepatitis B | 0.397350993 | 0.3036949 | 60 |
| Spliceosome | 0.403100775 | 0.327198397 | 52 |
| Endometrial cancer | 0.489795918 | 0.327198397 | 24 |
| Bladder cancer | 0.514285714 | 0.415456227 | 18 |