**Supplementary Table S1. *CYP27A1* transcript is downregulated in primary prostate tumors.**

Evaluation of *CYP27A1* expression across multiple publically available datasets indicates loss of *CYP27A1* in PC.

|  |  |  |
| --- | --- | --- |
| Dataset (Name-GSE#) | Prostate tissue type | p- value |
| Brase-GSE29079 | Tumor vs. Benign | 2.84e−19 |
| Taylor-GSE35988 | Primary vs. Normal-adjacent | 0.0269 |
| Wallace-GSE6956 | Primary vs. Normal | 0.00374 |
| Yu-GSE6919 | Primary vs. Normal-adjacent | 0.00372 |
| Tomlins-GSE6099 | Carcinoma vs. Normal | 0.0000372 |

**Supplementary Table S2. *CYP27A1* transcript is down-regulated in metastatic PC relative to primary tumors.**

Evaluation of *CYP27A1* expression across multiple publically available datasets indicates further loss of *CYP27A1* in metastatic PC relative to primary tumor.

|  |  |  |
| --- | --- | --- |
| Dataset (Name-GSE#) | Prostate tissue type | P- value |
| Chandran, GSE6752 | Metastatic vs. Primary | 0.00245 |
| Taylor, GSE35988 | Metastatic vs. Primary | 1.61e−08 |
| Yu, GSE6919 | Metastatic vs. Primary | 0.00147 |
| Tomlins, GSE6099 | Metastatic vs. Primary | 0.87650 |

**Supplementary Table S3. *CYP27A1* transcript levels in hormone resistant PC relative to hormone resistant PC.**

Evaluation of *CYP27A1* expression as PC transitions from hormone sensitive to hormone resistant cancer

|  |  |  |
| --- | --- | --- |
| Dataset (Name-GSE#) | Prostate tissue type | P- value |
| Tamura- GSE6811 | Hormone Resistant (HR) vs. Hormone Sensitive (HS) | 1.57e−09 |
| Tomlins- GSE6099 | Metastatic HR vs. Metastatic HS | 0.97626 |