

Table S1 TMB of each sample in TCGA-PRAD

| sample | TMB | | |
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| TCGA-2A-A8VL-01A | 0.710526316 | TCGA-CH-5737-01A | 1.131578947 |
| TCGA-2A-A8VO-01A | 0.736842105 | TCGA-CH-5738-01A | 0.421052632 |
| TCGA-2A-A8VT-01A | 1.105263158 | TCGA-CH-5739-01A | 0.789473684 |
| TCGA-2A-A8VV-01A | 0.605263158 | TCGA-CH-5740-01A | 0.526315789 |
| TCGA-2A-A8VX-01A | 0.921052632 | TCGA-CH-5741-01A | 0.473684211 |
| TCGA-2A-A8W1-01A | 0.605263158 | TCGA-CH-5744-01A | 0.684210526 |
| TCGA-2A-A8W3-01A | 1.026315789 | TCGA-CH-5745-01A | 0.631578947 |
| TCGA-2A-AAYF-01A | 0.473684211 | TCGA-CH-5746-01A | 0.289473684 |
| TCGA-2A-AAYO-01A | 0.552631579 | TCGA-CH-5748-01A | 0.789473684 |
| TCGA-2A-AAYU-01A | 0.578947368 | TCGA-CH-5750-01A | 0.842105263 |
| TCGA-4L-AA1F-01A | 0.763157895 | TCGA-CH-5751-01A | 0.657894737 |
| TCGA-CH-5737-01A | 1.131578947 | TCGA-CH-5752-01A | 1.157894737 |
| TCGA-CH-5738-01A | 0.421052632 | TCGA-CH-5753-01A | 1.236842105 |
| TCGA-CH-5739-01A | 0.789473684 | TCGA-CH-5754-01A | 2.078947368 |
| TCGA-CH-5740-01A | 0.526315789 | TCGA-CH-5761-01A | 1.131578947 |
| TCGA-CH-5741-01A | 0.473684211 | TCGA-CH-5762-01A | 1.394736842 |
| TCGA-CH-5744-01A | 0.684210526 | TCGA-CH-5763-01A | 0.315789474 |
| TCGA-CH-5745-01A | 0.631578947 | TCGA-CH-5764-01A | 0.894736842 |
| TCGA-CH-5746-01A | 0.289473684 | TCGA-CH-5765-01A | 0.710526316 |
| TCGA-CH-5748-01A | 0.789473684 | TCGA-CH-5766-01A | 0.815789474 |
| TCGA-CH-5750-01A | 0.842105263 | TCGA-CH-5767-01A | 0.921052632 |
| TCGA-CH-5751-01A | 0.657894737 | TCGA-CH-5768-01A | 0.973684211 |
| TCGA-CH-5752-01A | 1.157894737 | TCGA-CH-5769-01A | 2.578947368 |
| TCGA-CH-5753-01A | 1.236842105 | TCGA-CH-5771-01A | 0.684210526 |
| TCGA-CH-5754-01A | 2.078947368 | TCGA-CH-5772-01A | 1.105263158 |
| TCGA-CH-5761-01A | 1.131578947 | TCGA-CH-5788-01A | 0.815789474 |
| TCGA-CH-5762-01A | 1.394736842 | TCGA-CH-5789-01A | 0.157894737 |
| TCGA-CH-5763-01A | 0.315789474 | TCGA-CH-5790-01A | 0.421052632 |
| TCGA-CH-5764-01A | 0.894736842 | TCGA-CH-5791-01A | 0.921052632 |
| TCGA-CH-5765-01A | 0.710526316 | TCGA-CH-5792-01A | 0.921052632 |
| TCGA-CH-5766-01A | 0.815789474 | TCGA-CH-5794-01A | 0.631578947 |
| TCGA-CH-5767-01A | 0.921052632 | TCGA-EJ-5494-01A | 0.684210526 |
| TCGA-CH-5768-01A | 0.973684211 | TCGA-EJ-5495-01A | 2.026315789 |
| TCGA-CH-5769-01A | 2.578947368 | TCGA-EJ-5496-01A | 0.842105263 |
| TCGA-CH-5771-01A | 0.684210526 | TCGA-EJ-5497-01A | 0.447368421 |
| TCGA-CH-5772-01A | 1.105263158 | TCGA-EJ-5498-01A | 0.842105263 |
| TCGA-CH-5788-01A | 0.815789474 | TCGA-EJ-5499-01A | 0.842105263 |
| TCGA-CH-5789-01A | 0.157894737 | TCGA-EJ-5501-01A | 0.657894737 |
| TCGA-CH-5790-01A | 0.421052632 | TCGA-EJ-5502-01A | 0.236842105 |
| TCGA-CH-5791-01A | 0.921052632 | TCGA-EJ-5503-01A | 0.105263158 |
| TCGA-CH-5792-01A | 0.921052632 | TCGA-EJ-5504-01A | 1.026315789 |
| TCGA-CH-5794-01A | 0.631578947 | TCGA-EJ-5505-01A | 0.815789474 |
| TCGA-EJ-5494-01A | 0.684210526 | TCGA-EJ-5506-01A | 0.184210526 |
| TCGA-EJ-5495-01A | 2.026315789 | TCGA-EJ-5507-01A | 0.894736842 |
| TCGA-EJ-5496-01A | 0.842105263 | TCGA-EJ-5508-01A | 0.5 |
| TCGA-EJ-5497-01A | 0.447368421 | TCGA-EJ-5509-01A | 0.473684211 |
| TCGA-EJ-5498-01A | 0.842105263 | TCGA-EJ-5510-01A | 0.526315789 |
| TCGA-EJ-5499-01A | 0.842105263 | TCGA-EJ-5511-01A | 1 |
| TCGA-EJ-5501-01A | 0.657894737 | TCGA-EJ-5512-01A | 0.421052632 |
| TCGA-EJ-5502-01A | 0.236842105 | TCGA-EJ-5514-01A | 0.631578947 |
| TCGA-EJ-5503-01A | 0.105263158 | TCGA-EJ-5515-01A | 0.236842105 |
| TCGA-EJ-5504-01A | 1.026315789 | TCGA-EJ-5516-01A | 0.447368421 |
| TCGA-EJ-5505-01A | 0.815789474 | TCGA-EJ-5517-01A | 0.526315789 |
| TCGA-EJ-5506-01A | 0.184210526 | TCGA-EJ-5518-01A | 0.947368421 |
| TCGA-EJ-5507-01A | 0.894736842 | TCGA-EJ-5519-01A | 1.842105263 |
| TCGA-EJ-5508-01A | 0.5 | TCGA-EJ-5521-01A | 1.052631579 |
| TCGA-EJ-5509-01A | 0.473684211 | TCGA-EJ-5522-01A | 0.447368421 |
| TCGA-EJ-5510-01A | 0.526315789 | TCGA-EJ-5524-01A | 0.973684211 |
| TCGA-EJ-5511-01A | 1 | TCGA-EJ-5525-01A | 1.684210526 |
| TCGA-EJ-5512-01A | 0.421052632 | TCGA-EJ-5526-01A | 0.736842105 |
| TCGA-EJ-5514-01A | 0.631578947 | TCGA-EJ-5527-01A | 0.526315789 |
| TCGA-EJ-5515-01A | 0.236842105 | TCGA-EJ-5530-01A | 1.131578947 |
| TCGA-EJ-5516-01A | 0.447368421 | TCGA-EJ-5531-01A | 0.763157895 |
| TCGA-EJ-5517-01A | 0.526315789 | TCGA-EJ-5532-01A | 0.605263158 |
| TCGA-EJ-5518-01A | 0.947368421 | TCGA-EJ-5542-01A | 0.657894737 |
| TCGA-EJ-5519-01A | 1.842105263 | TCGA-EJ-7115-01A | 1.157894737 |
| TCGA-EJ-5521-01A | 1.052631579 | TCGA-EJ-7123-01A | 0.947368421 |
| TCGA-EJ-5522-01A | 0.447368421 | TCGA-EJ-7125-01A | 0.631578947 |
| TCGA-EJ-5524-01A | 0.973684211 | TCGA-EJ-7218-01B | 0.657894737 |
| TCGA-EJ-5525-01A | 1.684210526 | TCGA-EJ-7312-01B | 0.552631579 |
| TCGA-EJ-5526-01A | 0.736842105 | TCGA-EJ-7314-01A | 0.947368421 |
| TCGA-EJ-5527-01A | 0.526315789 | TCGA-EJ-7315-01A | 0.578947368 |
| TCGA-EJ-5530-01A | 1.131578947 | TCGA-EJ-7317-01A | 0.736842105 |
| TCGA-EJ-5531-01A | 0.763157895 | | |
| TCGA-EJ-5532-01A | 0.605263158 | | |
| TCGA-EJ-5542-01A | 0.657894737 | | |

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| TCGA-EJ-7318-01B | 0.684210526 | TCGA-EJ-A7NH-01A | 0.473684211 |
| TCGA-EJ-7321-01A | 0.710526316 | TCGA-EJ-A7NJ-01A | 0.184210526 |
| TCGA-EJ-7325-01B | 0.578947368 | TCGA-EJ-A7NK-01A | 0.131578947 |
| TCGA-EJ-7327-01A | 0.631578947 | TCGA-EJ-A7NM-01A | 1.368421053 |
| TCGA-EJ-7328-01A | 0.710526316 | TCGA-EJ-A7NN-01A | 0.894736842 |
| TCGA-EJ-7330-01A | 1.026315789 | TCGA-EJ-A8FN-01A | 0.894736842 |
| TCGA-EJ-7331-01A | 0.5 | TCGA-EJ-A8FO-01A | 0.289473684 |
| TCGA-EJ-7781-01A | 1.368421053 | TCGA-EJ-A8FP-01A | 0.105263158 |
| TCGA-EJ-7782-01A | 9.894736842 | TCGA-EJ-A8FS-01A | 0.684210526 |
| TCGA-EJ-7783-01A | 0.736842105 | TCGA-EJ-A8FU-01A | 0.184210526 |
| TCGA-EJ-7784-01A | 0.947368421 | TCGA-EJ-AB20-01A | 0.368421053 |
| TCGA-EJ-7785-01A | 0.5 | TCGA-EJ-AB27-01A | 0.368421053 |
| TCGA-EJ-7786-01A | 0.605263158 | TCGA-FC-7708-01A | 0.605263158 |
| TCGA-EJ-7788-01A | 0.763157895 | TCGA-FC-7961-01A | 1.263157895 |
| TCGA-EJ-7789-01A | 0.763157895 | TCGA-FC-A4JI-01A | 0.868421053 |
| TCGA-EJ-7791-01A | 0.315789474 | TCGA-FC-A5OB-01A | 0.552631579 |
| TCGA-EJ-7792-01A | 0.447368421 | TCGA-FC-A6HD-01A | 0.631578947 |
| TCGA-EJ-7793-01A | 0.157894737 | TCGA-FC-A8O0-01A | 0.394736842 |
| TCGA-EJ-7794-01A | 0.289473684 | TCGA-G9-6329-01A | 0.631578947 |
| TCGA-EJ-7797-01A | 0.605263158 | TCGA-G9-6332-01A | 0.605263158 |
| TCGA-EJ-8468-01A | 0.526315789 | TCGA-G9-6333-01A | 0.657894737 |
| TCGA-EJ-8469-01A | 0.763157895 | TCGA-G9-6336-01A | 0.473684211 |
| TCGA-EJ-8470-01A | 0.631578947 | TCGA-G9-6338-01A | 0.815789474 |
| TCGA-EJ-8472-01A | 1.184210526 | TCGA-G9-6339-01A | 1.131578947 |
| TCGA-EJ-8474-01A | 1.289473684 | TCGA-G9-6342-01A | 0.526315789 |
| TCGA-EJ-A46B-01A | 0.026315789 | TCGA-G9-6343-01A | 0.5 |
| TCGA-EJ-A46D-01A | 0.289473684 | TCGA-G9-6347-01A | 0.394736842 |
| TCGA-EJ-A46E-01A | 0.131578947 | TCGA-G9-6348-01A | 0.842105263 |
| TCGA-EJ-A46F-01A | 0.973684211 | TCGA-G9-6351-01A | 0.5 |
| TCGA-EJ-A46G-01A | 1.394736842 | TCGA-G9-6353-01A | 0.105263158 |
| TCGA-EJ-A46H-01A | 0.026315789 | TCGA-G9-6354-01A | 0.736842105 |
| TCGA-EJ-A46I-01A | 0.236842105 | TCGA-G9-6356-01A | 0.605263158 |
| TCGA-EJ-A65B-01A | 0.763157895 | TCGA-G9-6361-01A | 0.894736842 |
| TCGA-EJ-A65D-01A | 1.026315789 | TCGA-G9-6362-01A | 0.684210526 |
| TCGA-EJ-A65E-01A | 0.894736842 | TCGA-G9-6363-01A | 1 |
| TCGA-EJ-A65F-01A | 1.921052632 | TCGA-G9-6364-01A | 0.473684211 |
| TCGA-EJ-A65G-01A | 0.447368421 | TCGA-G9-6365-01A | 0.631578947 |
| TCGA-EJ-A65J-01A | 0.815789474 | TCGA-G9-6366-01A | 0.631578947 |
| TCGA-EJ-A65M-01A | 0.789473684 | TCGA-G9-6367-01A | 0.026315789 |
| TCGA-EJ-A6RA-01A | 0.210526316 | TCGA-G9-6369-01A | 0.684210526 |
| TCGA-EJ-A6RC-01A | 0.289473684 | TCGA-G9-6370-01A | 0.026315789 |
| TCGA-EJ-A7NF-01A | 0.368421053 | TCGA-G9-6371-01A | 0.657894737 |
| TCGA-EJ-A7NG-01A | 0.052631579 | TCGA-G9-6373-01A | 0.657894737 |

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| TCGA-G9-6377-01A | 0.710526316 | TCGA-HC-7747-01A | 0.605263158 |
| TCGA-G9-6378-01A | 0.552631579 | TCGA-HC-7748-01A | 0.526315789 |
| TCGA-G9-6379-01A | 0.789473684 | TCGA-HC-7749-01A | 1.184210526 |
| TCGA-G9-6384-01A | 0.5 | TCGA-HC-7750-01A | 0.394736842 |
| TCGA-G9-6385-01A | 0.157894737 | TCGA-HC-7752-01A | 0.736842105 |
| TCGA-G9-6494-01A | 0.789473684 | TCGA-HC-7817-01B | 0.421052632 |
| TCGA-G9-6496-01A | 0.842105263 | TCGA-HC-7818-01A | 0.473684211 |
| TCGA-G9-6498-01A | 0.578947368 | TCGA-HC-7819-01A | 0.526315789 |
| TCGA-G9-6499-01A | 0.894736842 | TCGA-HC-7820-01A | 0.789473684 |
| TCGA-G9-7509-01A | 0.578947368 | TCGA-HC-7821-01A | 0.421052632 |
| TCGA-G9-7510-01A | 0.868421053 | TCGA-HC-8213-01A | 0.447368421 |
| TCGA-G9-7519-01A | 0.789473684 | TCGA-HC-8216-01A | 2.289473684 |
| TCGA-G9-7521-01A | 0.657894737 | TCGA-HC-8256-01A | 0.447368421 |
| TCGA-G9-7522-01A | 0.263157895 | TCGA-HC-8257-01A | 1.078947368 |
| TCGA-G9-7523-01A | 0.263157895 | TCGA-HC-8258-01A | 0.236842105 |
| TCGA-G9-7525-01A | 0.868421053 | TCGA-HC-8259-01A | 1.105263158 |
| TCGA-G9-A9S0-01A | 0.736842105 | TCGA-HC-8260-01A | 0.263157895 |
| TCGA-G9-A9S4-01A | 0.868421053 | TCGA-HC-8261-01A | 0.631578947 |
| TCGA-G9-A9S7-01A | 0.578947368 | TCGA-HC-8262-01A | 0.815789474 |
| TCGA-H9-7775-01A | 0.736842105 | TCGA-HC-8264-01B | 1.105263158 |
| TCGA-H9-A6BX-01A | 0.131578947 | TCGA-HC-8265-01A | 1.421052632 |
| TCGA-H9-A6BY-01A | 0.684210526 | TCGA-HC-8266-01A | 0.552631579 |
| TCGA-HC-7075-01A | 0.684210526 | TCGA-HC-A48F-01A | 0.710526316 |
| TCGA-HC-7077-01A | 1.342105263 | TCGA-HC-A4ZV-01A | 2.947368421 |
| TCGA-HC-7078-01A | 0.894736842 | TCGA-HC-A631-01A | 0.842105263 |
| TCGA-HC-7080-01A | 0.657894737 | TCGA-HC-A632-01A | 0.815789474 |
| TCGA-HC-7081-01A | 0.631578947 | TCGA-HC-A6AL-01A | 1.078947368 |
| TCGA-HC-7209-01A | 0.5 | TCGA-HC-A6AN-01A | 0.894736842 |
| TCGA-HC-7210-01A | 0.921052632 | TCGA-HC-A6AO-01A | 0.789473684 |
| TCGA-HC-7211-01A | 0.421052632 | TCGA-HC-A6AP-01A | 0.684210526 |
| TCGA-HC-7212-01A | 0.5 | TCGA-HC-A6AQ-01A | 0.631578947 |
| TCGA-HC-7213-01A | 0.868421053 | TCGA-HC-A6AS-01A | 0.631578947 |
| TCGA-HC-7230-01A | 0.605263158 | TCGA-HC-A6HX-01A | 0.526315789 |
| TCGA-HC-7231-01A | 0.815789474 | TCGA-HC-A6HY-01A | 0.605263158 |
| TCGA-HC-7232-01A | 0.736842105 | TCGA-HC-A76W-01A | 0.710526316 |
| TCGA-HC-7233-01A | 0.763157895 | TCGA-HC-A76X-01A | 0.789473684 |
| TCGA-HC-7736-01A | 0.578947368 | TCGA-HC-A8CY-01A | 0.842105263 |
| TCGA-HC-7737-01A | 0.394736842 | TCGA-HC-A8D0-01A | 0.710526316 |
| TCGA-HC-7738-01A | 0.763157895 | TCGA-HC-A8D1-01A | 0.552631579 |
| TCGA-HC-7740-01A | 0.447368421 | TCGA-HC-A9TE-01A | 1.263157895 |
| TCGA-HC-7742-01A | 0.684210526 | TCGA-HC-A9TH-01A | 1.210526316 |
| TCGA-HC-7744-01A | 0.710526316 | TCGA-HI-7168-01A | 0.921052632 |
| TCGA-HC-7745-01A | 0.5 | TCGA-HI-7169-01A | 0.657894737 |

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| TCGA-HI-7170-01A | 0.631578947 | TCGA-KC-A7FD-01A | 1.078947368 |
| TCGA-HI-7171-01A | 0.763157895 | TCGA-KC-A7FE-01A | 0.289473684 |
| TCGA-J4-8198-01A | 0.657894737 | TCGA-KK-A59V-01A | 22.13157895 |
| TCGA-J4-8200-01A | 0.421052632 | TCGA-KK-A59X-01A | 1.263157895 |
| TCGA-J4-A67K-01A | 0.684210526 | TCGA-KK-A59Y-01A | 0.605263158 |
| TCGA-J4-A67L-01A | 0.631578947 | TCGA-KK-A59Z-01A | 1.289473684 |
| TCGA-J4-A67M-01A | 0.763157895 | TCGA-KK-A5A1-01A | 2.5 |
| TCGA-J4-A67N-01A | 0.684210526 | TCGA-KK-A6DY-01A | 0.763157895 |
| TCGA-J4-A67O-01A | 0.447368421 | TCGA-KK-A6E0-01A | 0.605263158 |
| TCGA-J4-A67Q-01A | 0.368421053 | TCGA-KK-A6E1-01A | 0.578947368 |
| TCGA-J4-A67R-01A | 0.368421053 | TCGA-KK-A6E2-01A | 0.868421053 |
| TCGA-J4-A67S-01A | 0.421052632 | TCGA-KK-A6E3-01A | 0.868421053 |
| TCGA-J4-A67T-01A | 0.394736842 | TCGA-KK-A6E4-01A | 0.763157895 |
| TCGA-J4-A6G1-01A | 0.289473684 | TCGA-KK-A6E5-01A | 0.526315789 |
| TCGA-J4-A6G3-01A | 0.473684211 | TCGA-KK-A6E6-01A | 0.921052632 |
| TCGA-J4-A6M7-01A | 0.447368421 | TCGA-KK-A6E7-01A | 0.736842105 |
| TCGA-J4-A83I-01A | 0.552631579 | TCGA-KK-A6E8-01A | 0.921052632 |
| TCGA-J4-A83J-01A | 1.131578947 | TCGA-KK-A7AP-01A | 0.921052632 |
| TCGA-J4-A83K-01A | 0.5 | TCGA-KK-A7AQ-01A | 0.789473684 |
| TCGA-J4-A83L-01A | 0.421052632 | TCGA-KK-A7AU-01A | 0.5 |
| TCGA-J4-A83M-01A | 0.684210526 | TCGA-KK-A7AV-01A | 0.289473684 |
| TCGA-J4-A83N-01A | 0.447368421 | TCGA-KK-A7AW-01A | 0.789473684 |
| TCGA-J4-AATV-01A | 0.052631579 | TCGA-KK-A7AY-01A | 1.131578947 |
| TCGA-J4-AATZ-01A | 0.973684211 | TCGA-KK-A7AZ-01A | 0.842105263 |
| TCGA-J4-AAU2-01A | 0.657894737 | TCGA-KK-A7B0-01A | 0.789473684 |
| TCGA-J9-A52B-01A | 0.921052632 | TCGA-KK-A7B1-01A | 0.447368421 |
| TCGA-J9-A52C-01A | 13.57894737 | TCGA-KK-A7B2-01A | 0.447368421 |
| TCGA-J9-A52D-01A | 1.052631579 | TCGA-KK-A7B3-01A | 0.921052632 |
| TCGA-J9-A52E-01A | 0.710526316 | TCGA-KK-A7B4-01A | 0.815789474 |
| TCGA-J9-A8CK-01A | 0.552631579 | TCGA-KK-A8I4-01A | 0.5 |
| TCGA-J9-A8CL-01A | 1.105263158 | TCGA-KK-A8I5-01A | 0.947368421 |
| TCGA-J9-A8CM-01A | 1.921052632 | TCGA-KK-A8I6-01A | 0.657894737 |
| TCGA-J9-A8CN-01A | 0.473684211 | TCGA-KK-A8I7-01A | 0.394736842 |
| TCGA-J9-A8CP-01A | 0.657894737 | TCGA-KK-A8I8-01A | 0.5 |
| TCGA-KC-A4BL-01A | 0.368421053 | TCGA-KK-A8I9-01A | 0.868421053 |
| TCGA-KC-A4BN-01A | 0.447368421 | TCGA-KK-A8IA-01A | 0.815789474 |
| TCGA-KC-A4BO-01A | 0 | TCGA-KK-A8IB-01A | 1.026315789 |
| TCGA-KC-A4BR-01A | 0.184210526 | TCGA-KK-A8IC-01A | 0.473684211 |
| TCGA-KC-A4BV-01A | 0.842105263 | TCGA-KK-A8ID-01A | 1.289473684 |
| TCGA-KC-A7F3-01A | 0.657894737 | TCGA-KK-A8IF-01A | 0.631578947 |
| TCGA-KC-A7F5-01A | 0.868421053 | TCGA-KK-A8IG-01A | 0.763157895 |
| TCGA-KC-A7F6-01A | 0.631578947 | TCGA-KK-A8IH-01A | 0.5 |
| TCGA-KC-A7FA-01A | 0.973684211 | TCGA-KK-A8II-01A | 0.868421053 |

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| TCGA-KK-A8IJ-01A | 0.631578947 | TCGA-V1-A9OT-01A | 0.789473684 |
| TCGA-KK-A8IK-01A | 0.842105263 | TCGA-V1-A9OX-01A | 0.447368421 |
| TCGA-KK-A8IL-01A | 0.684210526 | TCGA-V1-A9OY-01A | 0.5 |
| TCGA-KK-A8IM-01A | 0.684210526 | TCGA-V1-A9Z7-01A | 0.657894737 |
| TCGA-M7-A71Y-01A | 0.368421053 | TCGA-V1-A9Z8-01A | 0.657894737 |
| TCGA-M7-A71Z-01A | 0.657894737 | TCGA-V1-A9Z9-01A | 0.736842105 |
| TCGA-M7-A720-01A | 0.210526316 | TCGA-V1-A9ZG-01A | 0.815789474 |
| TCGA-M7-A721-01A | 0.736842105 | TCGA-V1-A9ZI-01A | 0.868421053 |
| TCGA-M7-A722-01A | 0.815789474 | TCGA-V1-A9ZK-01A | 0.605263158 |
| TCGA-M7-A723-01A | 0.131578947 | TCGA-V1-A9ZR-01A | 1.105263158 |
| TCGA-M7-A724-01A | 0.631578947 | TCGA-VN-A88I-01A | 0.342105263 |
| TCGA-M7-A725-01A | 0.684210526 | TCGA-VN-A88K-01A | 0.631578947 |
| TCGA-MG-AAMC-01A | 0.605263158 | TCGA-VN-A88L-01A | 0.315789474 |
| TCGA-QU-A6IL-01A | 0.605263158 | TCGA-VN-A88M-01A | 0.394736842 |
| TCGA-QU-A6IM-01A | 1.710526316 | TCGA-VN-A88N-01A | 0.473684211 |
| TCGA-QU-A6IN-01A | 0.605263158 | TCGA-VN-A88O-01A | 0.815789474 |
| TCGA-QU-A6IO-01A | 0.868421053 | TCGA-VN-A88P-01A | 1.052631579 |
| TCGA-QU-A6IP-01A | 0.5 | TCGA-VN-A88Q-01A | 0.947368421 |
| TCGA-SU-A7E7-01A | 0.552631579 | TCGA-VN-A88R-01A | 0.578947368 |
| TCGA-TK-A8OK-01A | 0.921052632 | TCGA-VN-A943-01A | 0.578947368 |
| TCGA-TP-A8TT-01A | 0.815789474 | TCGA-VP-A872-01A | 0.763157895 |
| TCGA-TP-A8TV-01A | 0.921052632 | TCGA-VP-A875-01A | 0.815789474 |
| TCGA-V1-A8MF-01A | 0.736842105 | TCGA-VP-A876-01A | 0.526315789 |
| TCGA-V1-A8MG-01A | 0.526315789 | TCGA-VP-A878-01A | 0.789473684 |
| TCGA-V1-A8MJ-01A | 0.368421053 | TCGA-VP-A879-01A | 1.026315789 |
| TCGA-V1-A8MK-01A | 0.131578947 | TCGA-VP-A87B-01A | 0.921052632 |
| TCGA-V1-A8ML-01A | 0.289473684 | TCGA-VP-A87C-01A | 0.5 |
| TCGA-V1-A8MM-01A | 0.447368421 | TCGA-VP-A87D-01A | 1.342105263 |
| TCGA-V1-A8MU-01A | 0.657894737 | TCGA-VP-A87E-01A | 0.5 |
| TCGA-V1-A8WL-01A | 0.789473684 | TCGA-VP-A87H-01A | 0.631578947 |
| TCGA-V1-A8WN-01A | 0.315789474 | TCGA-VP-A87J-01A | 0.736842105 |
| TCGA-V1-A8WS-01A | 0.605263158 | TCGA-VP-A87K-01A | 0.631578947 |
| TCGA-V1-A8WV-01A | 1.078947368 | TCGA-VP-AA1N-01A | 0.921052632 |
| TCGA-V1-A8WW-01A | 1 | TCGA-WW-A8ZI-01A | 0.763157895 |
| TCGA-V1-A8X3-01A | 0.684210526 | TCGA-X4-A8KQ-01A | 1.078947368 |
| TCGA-V1-A9O5-01A | 0.789473684 | TCGA-X4-A8KS-01A | 0.578947368 |
| TCGA-V1-A9O7-01A | 0.815789474 | TCGA-XA-A8JR-01A | 0.473684211 |
| TCGA-V1-A9O9-01A | 0.631578947 | TCGA-XJ-A83F-01A | 0.736842105 |
| TCGA-V1-A9OA-01A | 0.473684211 | TCGA-XJ-A83G-01A | 0.657894737 |
| TCGA-V1-A9OF-01A | 0.342105263 | TCGA-XJ-A83H-01A | 0.868421053 |
| TCGA-V1-A9OH-01A | 1.394736842 | TCGA-XJ-A9DI-01A | 0.342105263 |
| TCGA-V1-A9OL-01A | 0.894736842 | TCGA-XJ-A9DK-01A | 0.105263158 |
| TCGA-V1-A9OQ-01A | 1.131578947 | TCGA-XJ-A9DQ-01A | 0.131578947 |

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| TCGA-XJ-A9DX-01A | 1.736842105 | TCGA-ZG-A8QW-01A | 0.605263158 |
| TCGA-XK-AAIR-01A | 0.578947368 | TCGA-ZG-A8QX-01A | 0.684210526 |
| TCGA-XK-AAIV-01A | 1.315789474 | TCGA-ZG-A8QY-01A | 1.447368421 |
| TCGA-XK-AAIW-01A | 168.3157895 | TCGA-ZG-A8QZ-01A | 0.684210526 |
| TCGA-XK-AAJ3-01A | 1.342105263 | TCGA-ZG-A9KY-01A | 1.473684211 |
| TCGA-XK-AAJA-01A | 0.947368421 | TCGA-ZG-A9L0-01A | 1 |
| TCGA-XK-AAJP-01A | 0.973684211 | TCGA-ZG-A9L1-01A | 0.605263158 |
| TCGA-XK-AAJR-01A | 0.605263158 | TCGA-ZG-A9L2-01A | 0.684210526 |
| TCGA-XK-AAJT-01A | 0.736842105 | TCGA-ZG-A9L4-01A | 0.578947368 |
| TCGA-XK-AAJU-01A | 0.052631579 | TCGA-ZG-A9L5-01A | 1.184210526 |
| TCGA-XK-AAK1-01A | 0.842105263 | TCGA-ZG-A9L6-01A | 0.736842105 |
| TCGA-XQ-A8TA-01A | 2.921052632 | TCGA-ZG-A9L9-01A | 0.921052632 |
| TCGA-XQ-A8TB-01A | 0.631578947 | TCGA-ZG-A9LB-01A | 1.236842105 |
| TCGA-Y6-A8TL-01A | 0.736842105 | TCGA-ZG-A9LM-01A | 0.842105263 |
| TCGA-Y6-A9XI-01A | 1.184210526 | TCGA-ZG-A9LN-01A | 0.763157895 |
| TCGA-YJ-A8SW-01A | 1.578947368 | TCGA-ZG-A9LS-01A | 0.5 |
| TCGA-YL-A8HJ-01A | 0.842105263 | TCGA-ZG-A9LU-01A | 0.5 |
| TCGA-YL-A8HK-01A | 0.447368421 | TCGA-ZG-A9LY-01A | 0.921052632 |
| TCGA-YL-A8HL-01A | 0.5 | TCGA-ZG-A9LZ-01A | 0.868421053 |
| TCGA-YL-A8HM-01A | 1 | TCGA-ZG-A9M4-01A | 0.789473684 |
| TCGA-YL-A8HO-01A | 0.710526316 | TCGA-ZG-A9MC-01A | 0.684210526 |
| TCGA-YL-A8S8-01A | 1.157894737 | TCGA-ZG-A9N3-01A | 1.342105263 |
| TCGA-YL-A8S9-01A | 1 | TCGA-ZG-A9ND-01A | 0.631578947 |
| TCGA-YL-A8SA-01A | 0.684210526 | TCGA-ZG-A9NI-01A | 2.157894737 |
| TCGA-YL-A8SB-01A | 0.710526316 | | |
| TCGA-YL-A8SC-01A | 0.973684211 | | |
| TCGA-YL-A8SF-01A | 0.447368421 | | |
| TCGA-YL-A8SH-01B | 0.842105263 | | |
| TCGA-YL-A8SI-01A | 0.5 | | |
| TCGA-YL-A8SJ-01B | 0.605263158 | | |
| TCGA-YL-A8SK-01B | 0.894736842 | | |
| TCGA-YL-A8SL-01B | 1.105263158 | | |
| TCGA-YL-A8SO-01B | 0.842105263 | | |
| TCGA-YL-A8SP-01B | 0.578947368 | | |
| TCGA-YL-A8SQ-01B | 0.815789474 | | |
| TCGA-YL-A8SR-01B | 0.605263158 | | |
| TCGA-YL-A9WH-01A | 1.342105263 | | |
| TCGA-YL-A9WI-01A | 1 | | |
| TCGA-YL-A9WJ-01A | 0.552631579 | | |
| TCGA-YL-A9WK-01A | 0.657894737 | | |
| TCGA-YL-A9WL-01A | 0.710526316 | | |
| TCGA-YL-A9WX-01A | 0.210526316 | | |
| TCGA-YL-A9WY-01A | 0.894736842 | | |

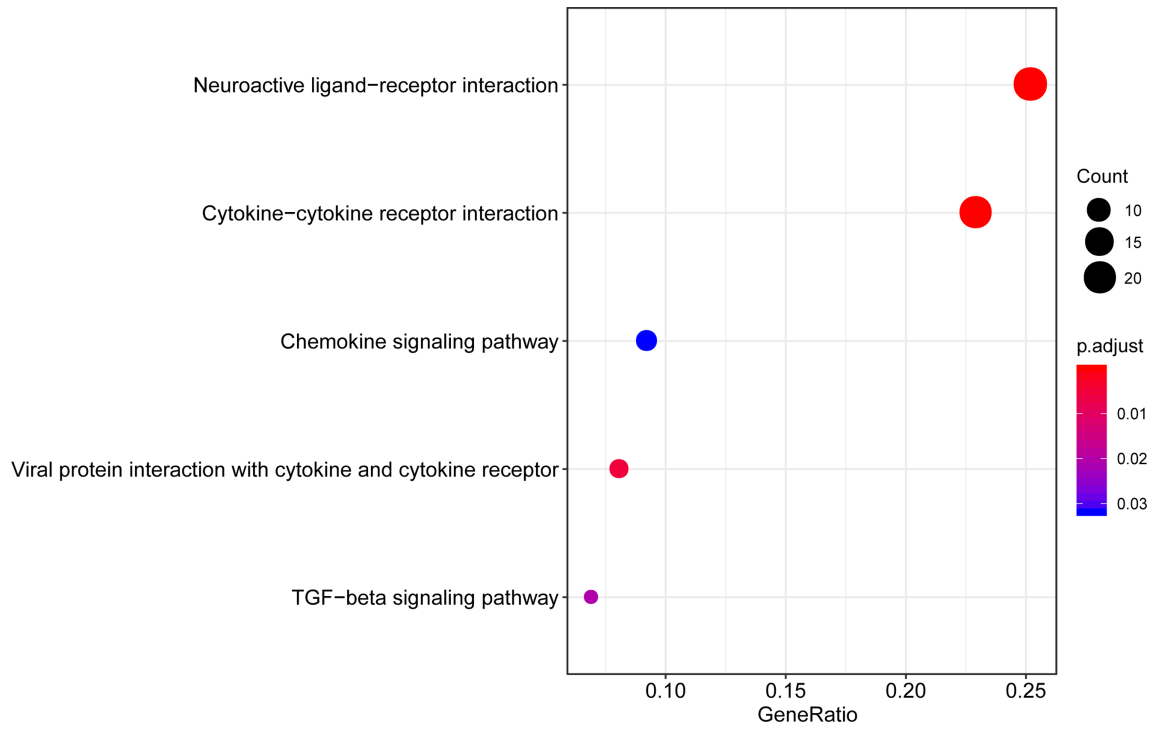


Figure S1 KEGG enrichment analysis of differentially expressed immune genes

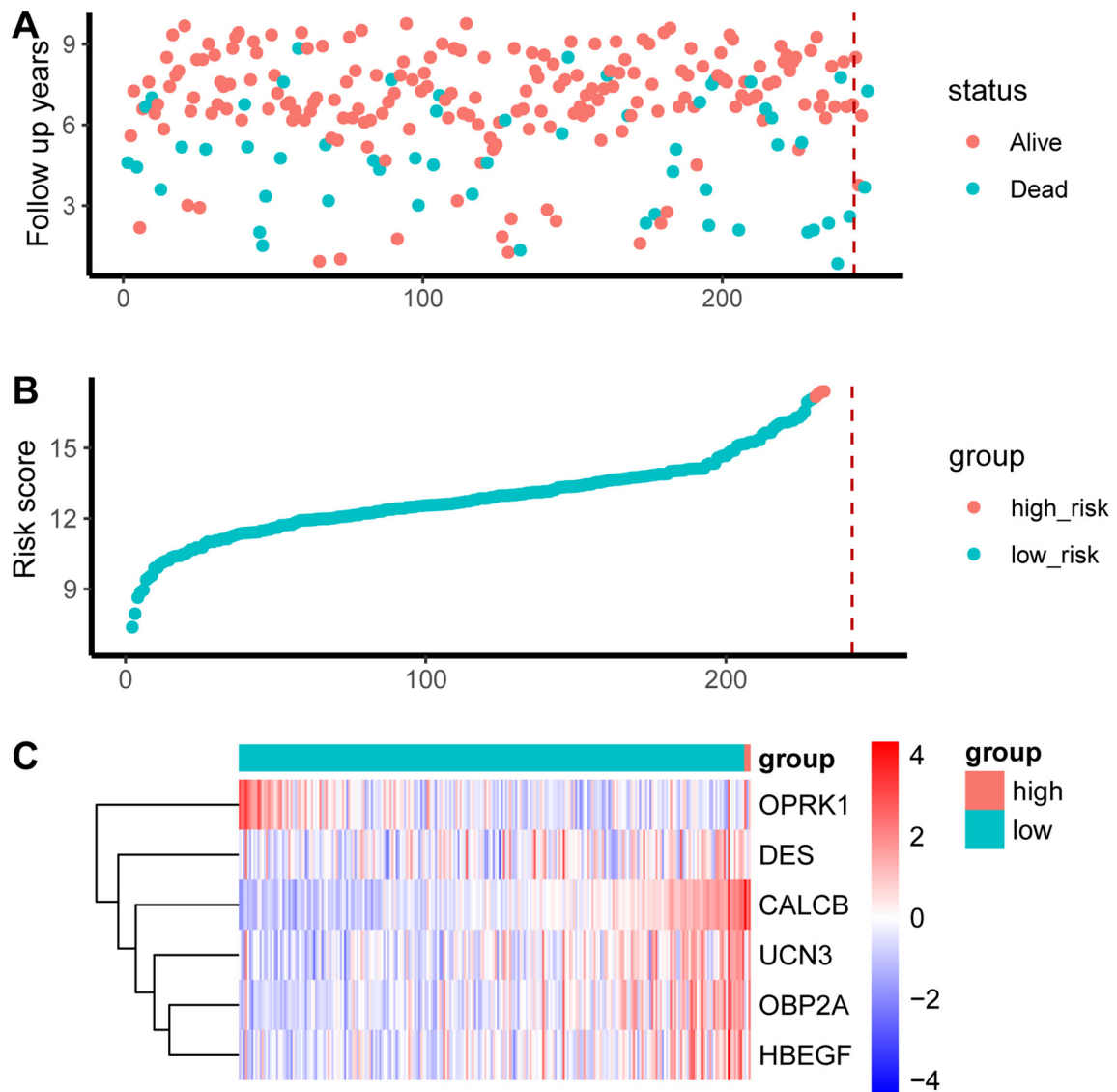


Figure S2 Risk factor graph of GSE116918 data set. (A,B,C) The definition of the X axis is the serial number of each individual. (A) Scatter plot of individual distribution of high- and low-risk groups. (B) Scatter plot of full sample risk scores from low to high. (C) Gene expression heat map of each sample from low risk to high risk.

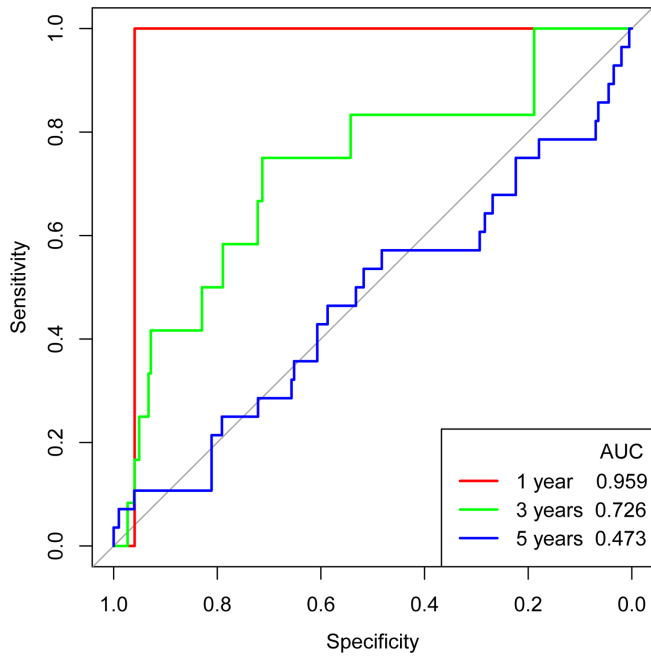


Figure S3 ROC curve of 1, 3, and 5 years of GSE116918 data set.

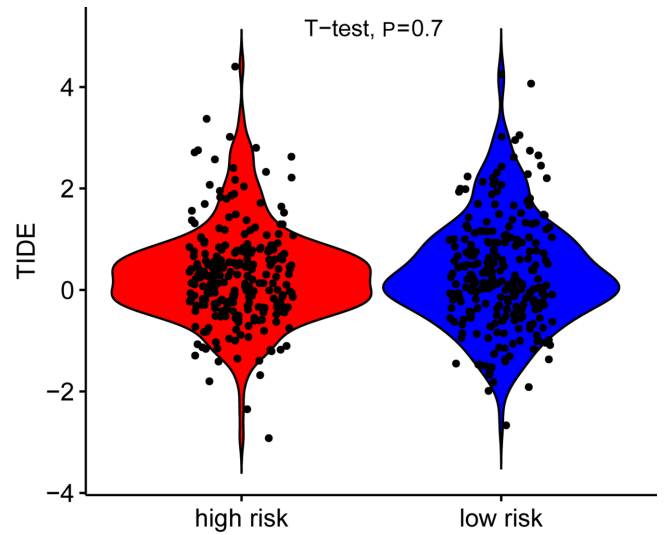


Figure S4 Comparison of immunotherapy between high and low risk groups of prostate cancer.

Table S2 Single factor COX analysis of high and low risk groups

| Name | coef | HR | lower.95 | upper.95 | P |
|------------|----------|----------|----------|----------|----------|
| Mutation | 0.564331 | 1.758271 | 0.455439 | 6.787988 | 0.412895 |
| age | 0.012428 | 1.012506 | 0.928968 | 1.103556 | 0.777265 |
| T | -2.99793 | -2.62297 | 6.02E-09 | 20.04397 | 0.072587 |
| N | 0.137563 | 0.971344 | 0.871479 | 0.378574 | 0.073671 |
| Risk group | -2.29162 | 0.101102 | 0.012976 | 0.787715 | 0.028686 |