# Microarray expression of the 7 genes and clinical variables in 295 breast cancers
## (P values, t-Test or ANOVA Test, NKI dataset)

| Gene | Name | Location | Death | Metastasis | Grade | Size | LN | ER | ERBB2 | Triple(-) |
|------|------|----------|-------|------------|-------|------|-----|-----|-------|-----------|
| ASPN | asporin | 9q22 | 0.00034 | 0.01130 | 0.00000 | 0.00016 | 0.73950 | 0.00000 | 0.06602 | 0.00000 |
| CACNG4 | calcium channel, voltage-dependent, gamma subunit 4 | 17q24 | 0.50678 | 0.50400 | 0.66543 | 0.90002 | 0.02962 | 0.00000 | 0.85201 | 0.00000 |
| CHD1 | chromodomain helicase DNA binding protein 1 | 5q15-q21 | 0.02500 | 0.08944 | 0.03773 | 0.53952 | 0.46680 | 0.00000 | 0.04025 | 0.00003 |
| GNA13 | guanine nucleotide binding protein (G protein), alpha 13 | 17q24.1a | 0.80909 | 0.13685 | 0.00103 | 0.00396 | 0.94768 | 0.00267 | 0.96444 | 0.01138 |
| PITPNC1 | phosphatidylinositol transfer protein, cytoplasmic 1 | 17q24.2 | 0.00539 | 0.06072 | 0.00000 | 0.42898 | 0.44487 | 0.00000 | 0.00006 | 0.04661 |
| PRKCA | protein kinase C, alpha | 17q24.2a | 0.33224 | 0.29809 | 0.67531 | 0.43074 | 0.95799 | 0.45772 | 0.18033 | 0.05698 |
| SFRS7 | splicing factor, arginine/serine-rich 7, 35kDa | 2p22.1 | 0.00009 | 0.07089 | 0.00000 | 0.01953 | 0.23883 | 0.00000 | 0.30710 | 0.00000 |

## ASPN in NKI 295 dataset

| Variables | ASPN | | | | P value |
|---|---|---|---|---|---|
| | (-) | | (+) | | |
| | N | % | N | % | |
| Size <=2cm | 89 | 46.1 | 66 | 64.7 | 0.0032 |
| >2cm | 104 | 53.9 | 36 | 35.3 | |
| LN (-) | 98 | 50.8 | 53 | 52.0 | 0.9027 |
| (+) | 95 | 49.2 | 49 | 48.0 | |
| Grade 1 | 38 | 19.7 | 37 | 36.3 | 0.0003 |
| 2 | 62 | 32.1 | 39 | 38.2 | |
| 3 | 93 | 48.2 | 26 | 25.5 | |
| ER (-) | 60 | 31.1 | 9 | 8.8 | <0.0001 |
| (+) | 133 | 68.9 | 93 | 91.2 | |
| ERBB2 (-) | 163 | 84.5 | 83 | 81.4 | 0.5136 |
| (+) | 30 | 15.5 | 19 | 18.6 | |
| Triple(-) No | 156 | 80.8 | 99 | 97.1 | <0.0001 |
| Yes | 37 | 19.2 | 3 | 2.9 | |

### NKI-ASPN: P=0.0031
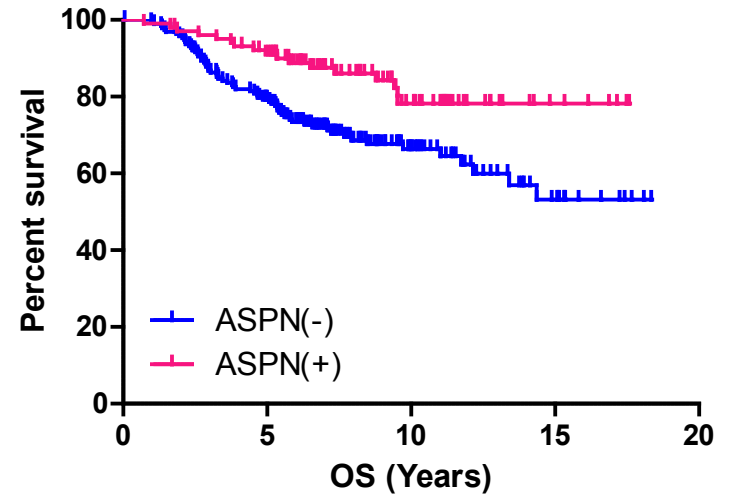


### NKI-ASPN: P=0.0205
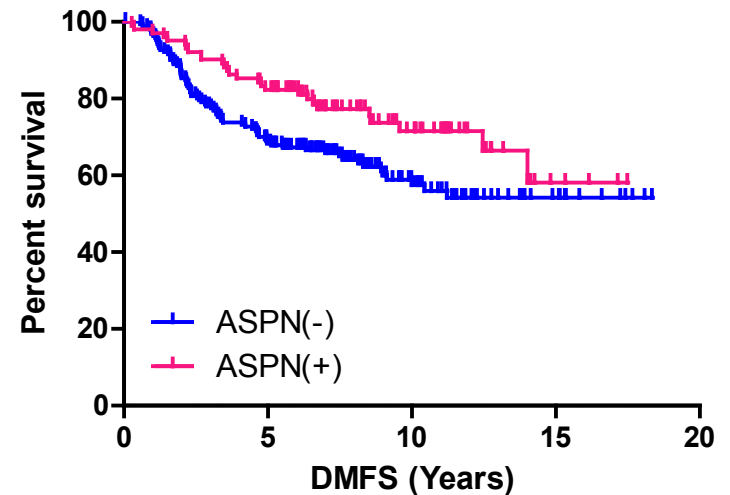
# CACNG4 in NKI 295 dataset

| Variables | CACNG4 (-) | | CACNG4 (+) | | P value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Size <=2cm | 105 | 52.0 | 50 | 53.8 | 0.8028 |
| >2cm | 97 | 48.0 | 43 | 46.2 | |
| LN (-) | 108 | 53.5 | 43 | 46.2 | 0.2615 |
| (+) | 94 | 46.5 | 50 | 53.8 | |
| Grade 1 | 57 | 28.2 | 18 | 19.4 | 0.3996 |
| 2 | 63 | 31.2 | 38 | 40.9 | |
| 3 | 82 | 40.6 | 37 | 39.8 | |
| ER (-) | 59 | 29.2 | 10 | 10.8 | 0.0004 |
| (+) | 143 | 70.8 | 83 | 89.2 | |
| ERBB2 (-) | 167 | 82.7 | 79 | 84.9 | 0.7369 |
| (+) | 35 | 17.3 | 14 | 15.1 | |
| Triple(-) No | 163 | 80.7 | 92 | 98.9 | <0.0001 |
| Yes | 39 | 19.3 | 1 | 1.1 | |

## NKI-CACNG4: P=0.5153



Percent survival vs OS (Years)
CACNG4(-)
CACNG4(+)

## NKI-CACNG4: P=0.3737



Percent survival vs DMFS (Years)
CACNG4(-)
CACNG4(+)
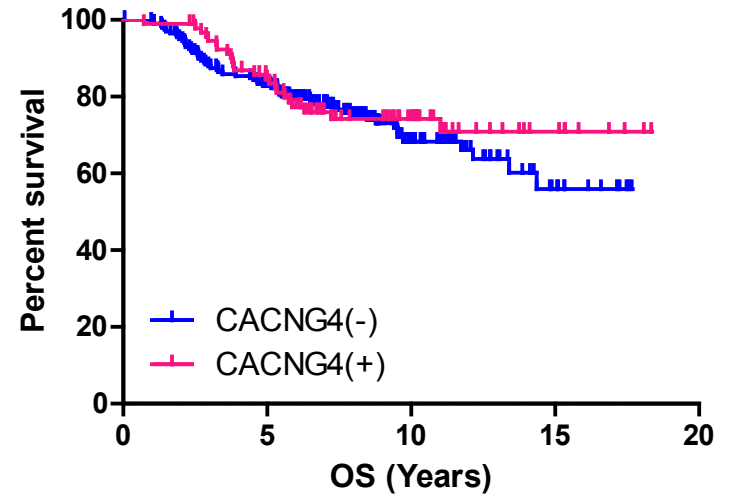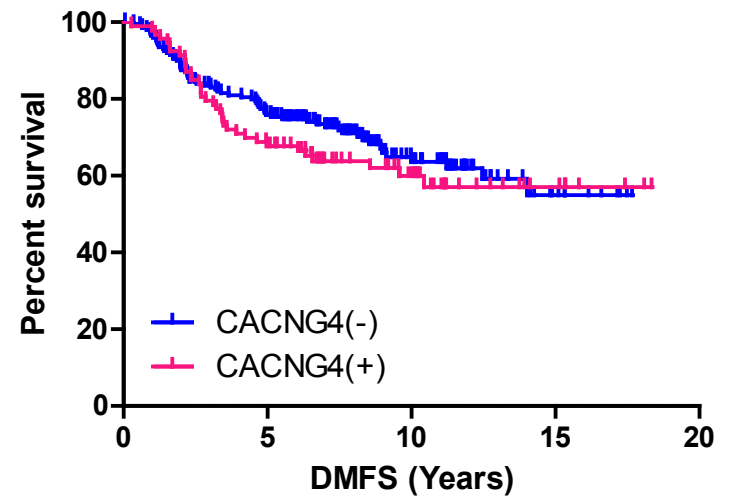
## CHD1 in NKI 295 dataset

| Variables | CHD1 | | | | P value |
|---|---|---|---|---|---|
| | (-) | | (+) | | |
| | N | % | N | % | |
| Size <=2cm | 75 | 49.3 | 80 | 55.9 | 0.294 |
| >2cm | 77 | 50.7 | 63 | 44.1 | |
| LN (-) | 82 | 53.9 | 69 | 48.3 | 0.3524 |
| (+) | 70 | 46.1 | 74 | 51.7 | |
| Grade 1 | 32 | 21.1 | 43 | 30.1 | 0.0529 |
| 2 | 49 | 32.2 | 52 | 36.4 | |
| 3 | 71 | 46.7 | 48 | 33.6 | |
| ER (-) | 54 | 35.5 | 15 | 10.5 | <0.0001 |
| (+) | 98 | 64.5 | 128 | 89.5 | |
| ERBB2 (-) | 120 | 78.9 | 126 | 88.1 | 0.0417 |
| (+) | 32 | 21.1 | 17 | 11.9 | |
| Triple(-) No | 121 | 79.6 | 134 | 93.7 | 0.0005 |
| Yes | 31 | 20.4 | 9 | 6.3 | |

### NKI-CHD1: P=0.0009
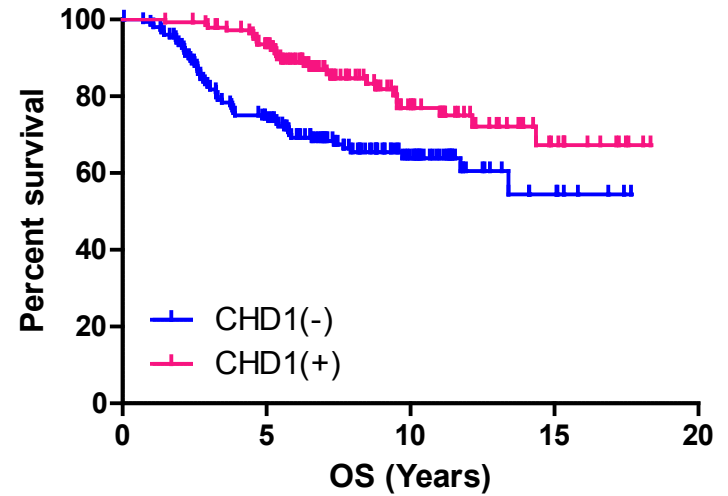


### NKI-CHD1: P=0.0053
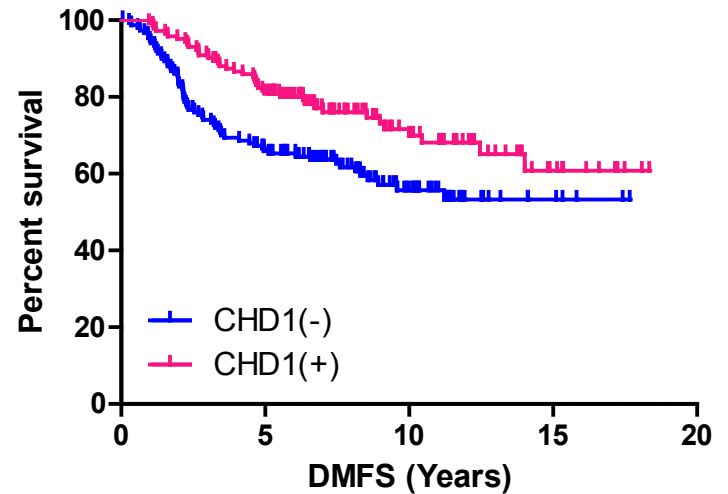
# GNA13 in NKI 295 dataset

| Variables | GNA13 | | | | *P* value |
|---|---|---|---|---|---|
| | (-) | | (+) | | |
| | N | % | N | % | |
| Size <=2cm | 61 | 61.6 | 94 | 48.0 | 0.0356 |
| >2cm | 38 | 38.4 | 102 | 52.0 | |
| LN (-) | 53 | 53.5 | 98 | 50.0 | 0.6222 |
| (+) | 46 | 46.5 | 98 | 50.0 | |
| Grade 1 | 31 | 31.3 | 44 | 22.4 | 0.0649 |
| 2 | 37 | 37.4 | 64 | 32.7 | |
| 3 | 31 | 31.3 | 88 | 44.9 | |
| ER (-) | 16 | 16.2 | 53 | 27.0 | 0.0417 |
| (+) | 83 | 83.8 | 143 | 73.0 | |
| ERBB2 (-) | 80 | 80.8 | 166 | 84.7 | 0.4108 |
| (+) | 19 | 19.2 | 30 | 15.3 | |
| Triple(-) No | 94 | 94.9 | 161 | 82.1 | 0.002 |
| Yes | 5 | 5.1 | 35 | 17.9 | |

## NKI-GNA13: P=0.6357
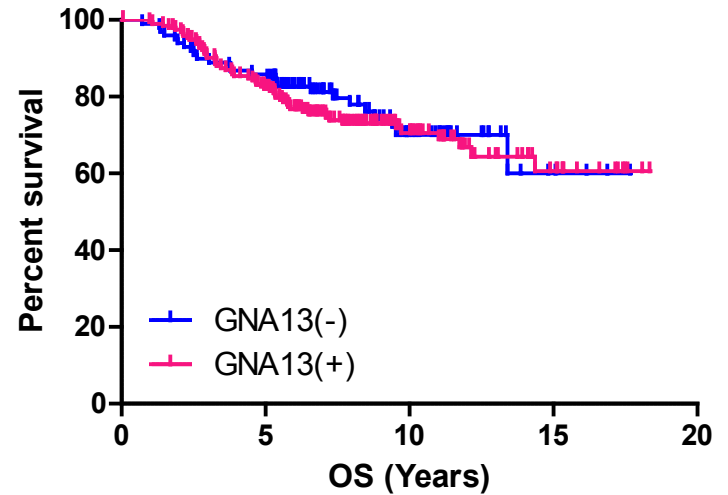


## NKI-GNA13: P=0.3682
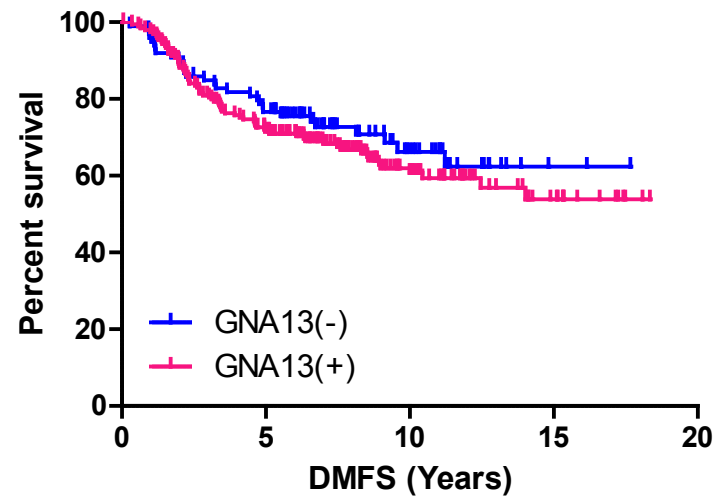
## PITPNC1 in NKI 295 dataset

| Variables | PITPNC1 | | | | P value |
|---|---|---|---|---|---|
| | (-) | | (+) | | |
| | N | % | N | % | |
| Size <=2cm | 99 | 53.8 | 56 | 50.5 | 0.6307 |
| >2cm | 85 | 46.2 | 55 | 49.5 | |
| LN (-) | 96 | 52.2 | 55 | 49.5 | 0.7187 |
| (+) | 88 | 47.8 | 56 | 50.5 | |
| Grade 1 | 67 | 36.4 | 8 | 7.2 | <0.0001 |
| 2 | 64 | 34.8 | 37 | 33.3 | |
| 3 | 53 | 28.8 | 66 | 59.5 | |
| ER (-) | 25 | 13.6 | 44 | 39.6 | <0.0001 |
| (+) | 159 | 86.4 | 67 | 60.4 | |
| ERBB2 (-) | 169 | 91.8 | 77 | 69.4 | < 0.0001 |
| (+) | 15 | 8.2 | 34 | 30.6 | |
| Triple(-) No | 165 | 89.7 | 90 | 81.1 | 0.0524 |
| Yes | 19 | 10.3 | 21 | 18.9 | |

### NKI-PITPNC1: P=0.0002
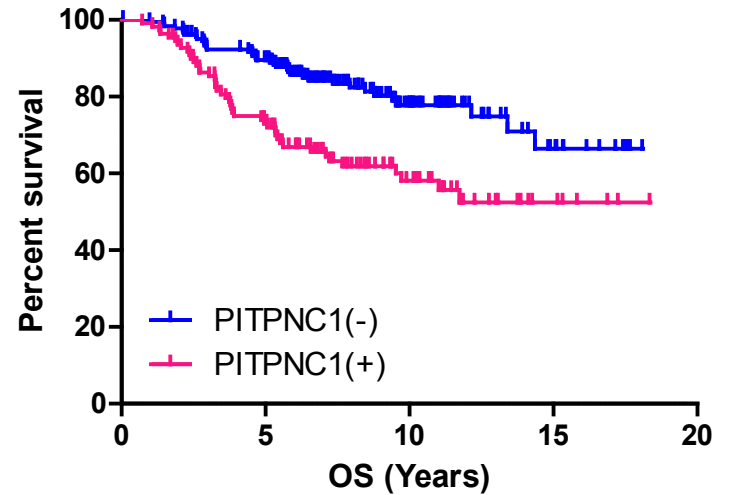


### NKI-PITPNC1: P=0.0008
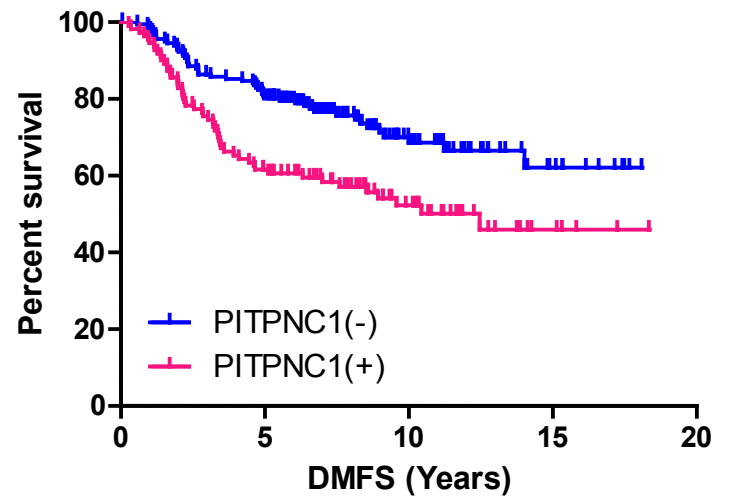
# PRKCA in NKI 295 dataset

| Variables | PRKCA | | | | P value |
|---|---|---|---|---|---|
| | (-) | | (+) | | |
| | N | % | N | % | |
| Size <=2cm | 86 | 54.4 | 69 | 50.4 | 0.559 |
| >2cm | 72 | 45.6 | 68 | 49.6 | |
| LN (-) | 82 | 51.9 | 69 | 50.4 | 0.8161 |
| (+) | 76 | 48.1 | 68 | 49.6 | |
| Grade 1 | 41 | 25.9 | 34 | 24.8 | 0.9726 |
| 2 | 54 | 34.2 | 47 | 34.3 | |
| 3 | 63 | 39.9 | 56 | 40.9 | |
| ER (-) | 34 | 21.5 | 35 | 25.5 | 0.4907 |
| (+) | 124 | 78.5 | 102 | 74.5 | |
| ERBB2 (-) | 125 | 79.1 | 121 | 88.3 | 0.0412 |
| (+) | 33 | 20.9 | 16 | 11.7 | |
| Triple(-) No | 139 | 88.0 | 116 | 84.7 | 0.4957 |
| Yes | 19 | 12.0 | 21 | 15.3 | |

**NKI-PRKCA: P=0.1086**
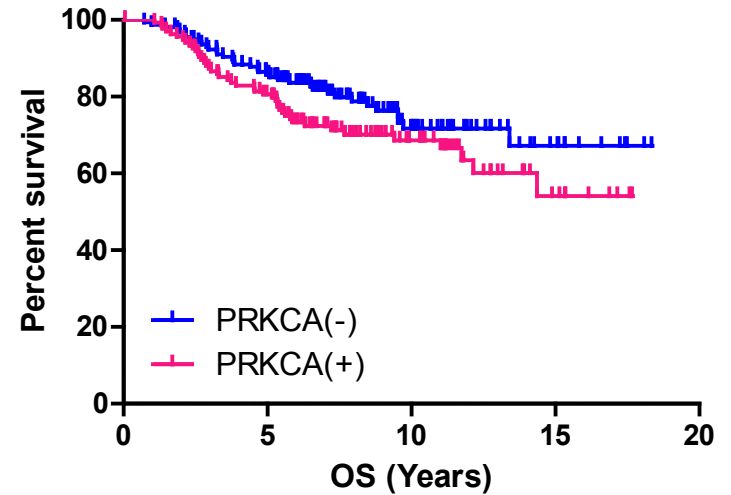


**NKI-PRKCA: P=0.2592**
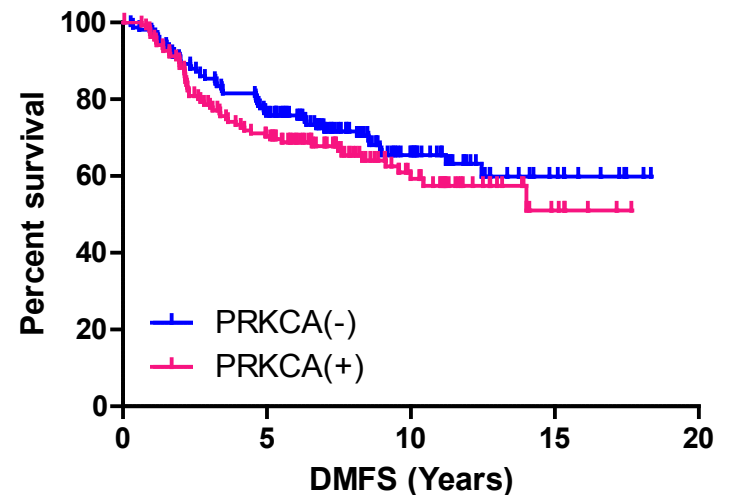
# SFRS7 in NKI 295 dataset

| Variables | SFRS7 (-) | | SFRS7 (+) | | P value |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Size <=2cm | 94 | 59.9 | 61 | 44.2 | 0.0075 |
| >2cm | 63 | 40.1 | 77 | 55.8 | |
| LN (-) | 82 | 52.2 | 69 | 50.0 | 0.7272 |
| (+) | 75 | 47.8 | 69 | 50.0 | |
| Grade 1 | 53 | 33.8 | 22 | 15.9 | <0.0001 |
| 2 | 64 | 40.8 | 37 | 26.8 | |
| 3 | 40 | 25.5 | 79 | 57.2 | |
| ER (-) | 15 | 9.6 | 54 | 39.1 | <0.0001 |
| (+) | 142 | 90.4 | 84 | 60.9 | |
| ERBB2 (-) | 134 | 85.4 | 112 | 81.2 | 0.3509 |
| (+) | 23 | 14.6 | 26 | 18.8 | |
| Triple(-) No | 155 | 98.7 | 100 | 72.5 | <0.0001 |
| Yes | 2 | 1.3 | 38 | 27.5 | |

**NKI-SFRS7: P<0.0001**
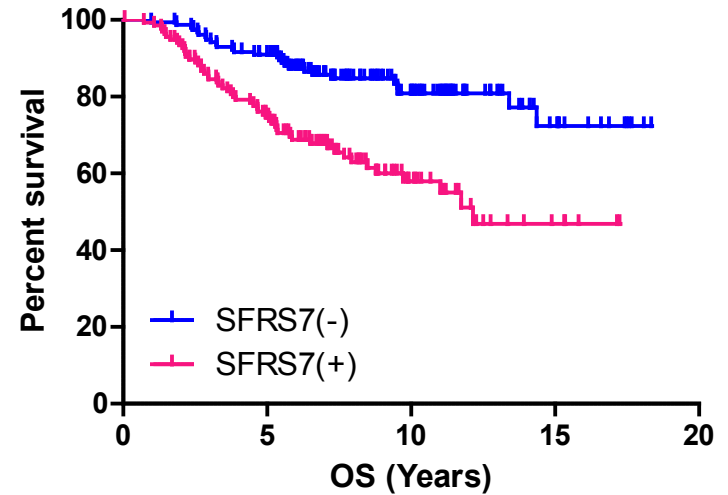


**NKI-SFRS7: P=0.0118**
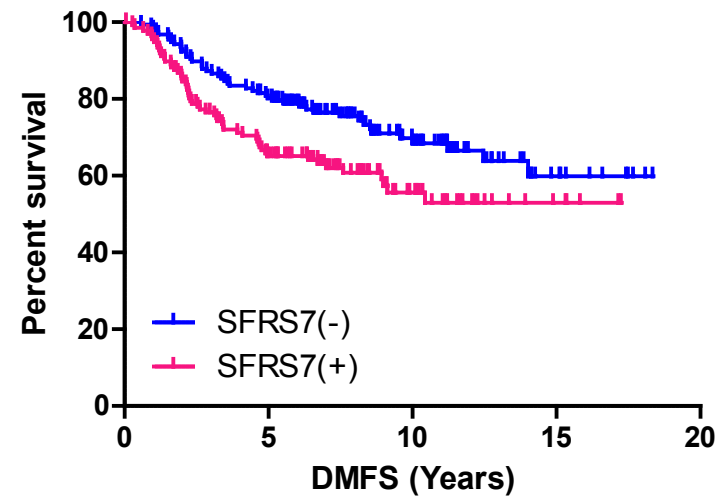
# CACNG4 and Her2 in UNC 245 dataset

**CACNG4: P=0.0087**