

Table SI. Co-expression of HER family members, EGFRvIII, CD44, EpCAM and Ki67 in patients with hepatocellular carcinoma with >5% staining and >10% staining.

| Variables | No. of patients with >5% staining (%) | No. of patients with >10% staining (%) |
|-------------------------|---|--|
| wtEGFR + HER-2 | 10 (23) | 7 (16) |
| wtEGFR + HER-4 | 2 (5) | - |
| wtEGFR + EGFRvIII | 6 (14) | 3 (7) |
| wtEGFR + CD44 | 6 (14) | 3 (7) |
| wtEGFR + EpCAM | 6 (14) | 4 (9) |
| wtEGFR + Ki67 | 11 (26) | 5 (12) |
| HER-2 + HER-4 | 5 (12) | 2 (5) |
| HER-2 + EGFRvIII | 6 (14) | 2 (5) |
| HER-2 + CD44 | 11 (26) | 9 (21) |
| HER-2 + EpCAM | 10 (23) | 6 (14) |
| HER-2 + Ki67 | 17 (40) | 10 (23) |
| HER-4 + EGFRvIII | 1 (2) | - |
| HER-4 + CD44 | 4 (9) | 1 (2) |
| HER-4 + EpCAM | 2 (5) | - |
| HER-4 + Ki67 | 4 (9) | 1 (2) |
| EGFRvIII+ CD44 | 3 (7) | 1 (2) |
| EGFRvIII + EpCAM | 6 (14) | 1 (2) |
| EGFRvIII + Ki67 | 8 (19) | 2 (5) |
| CD44 + EpCAM | 6 (14) | - |
| CD44 + Ki67 | 13 (30) | 7 (16) |
| EpCAM + Ki67 | 9 (21) | 2 (5) |
| EGFR + HER-2 + HER-4 | 1 (2) | - |
| EGFR + HER-2 + CD44 | 5 (12) | 2 (5) |
| EGFR + HER-2 + EpCAM | 4 (9) | 3 (7) |
| EGFR + HER-2 + EGFRvIII | 4 (9) | 2 (5) |
| EGFR + HER-2 + Ki67 | 6 (14) | 3 (7) |
| EGFR + HER-4 + CD44 | 1 (2) | - |
| EGFR + HER-4+ EpCAM | 1 (2) | - |
| EGFR + HER-4 + EGFRvIII | 1 (2) | - |
| EGFR + HER-4 + Ki67 | 2 (5) | - |
| EGFR + CD44+ EpCAM | 4 (9) | - |
| EGFR + CD44 + EGFRvIII | 2 (5) | 1 (2) |
| EGFR + CD44 + Ki67 | 6 (14) | 2 (5) |
| EGFR + EpCAM + EGFRvIII | 3 (7) | 1 (2) |
| EGFR + EpCAM + Ki67 | 4 (9) | 1 (2) |

| | | |
|--|--------|-------|
| EGFR + EGFRvIII + Ki67 | 5 (12) | 1 (2) |
| HER-2 + HER-4 + CD44 | 4 (9) | 1 (2) |
| HER-2 + HER-4+ EpCAM | 1 (2) | - |
| HER-2 + HER-4 + Ki67 | 4 (9) | 1 (2) |
| HER-2 + CD44+ EpCAM | 4 (9) | - |
| HER - 2 + CD44 + EGFRvIII | 2 (5) | 1 (2) |
| HER-2 + CD44 + Ki67 | 9 (21) | 4 (9) |
| HER-2 + EpCAM + EGFRvIII | 3 (7) | - |
| HER-4 + CD44 + EpCAM | 1 (2) | - |
| HER-4 + EpCAM + EGFRvIII | 1 (2) | - |
| CD44 + EpCAM + EGFRvIII | 2 (5) | - |
| EGFRvIII + EpCAM + Ki67 | 4 (9) | - |
| CD44 + Ki67 + EGFRvIII | 2 (5) | - |
| EGFR + CD44 + EpCAM + EGFRvIII | 1 (2) | - |
| HER-2 + CD44 + EpCAM + EGFRvIII | 1 (2) | - |
| Ki67 + CD44 + EpCAM + EGFRvIII | 1 (2) | - |
| EGFR + HER-2 + CD44 + EpCAM | 1 (2) | - |
| EGFR + Ki67 + CD44 + EpCAM | 2 (5) | - |
| HER-2 + HER-4 + CD44 + EpCAM | 1 (2) | - |
| HER-2 + HER-4 + CD44 +Ki67 | 4 (9) | - |
| EGFR + HER-4 + EGFRvIII + CD44 + EpCAM | 1 (2) | - |

EGFRvIII, type-III deletion mutant EGFR; EpCAM, epithelial cell adhesion molecule; wt, wild-type.

Table SII. Association between the expression and co-expression of HER family members, CD44, EpCAM and Ki67 and overall survival.

| Biomarker expression | Overall survival | | |
|-----------------------|------------------|--------------|---------|
| | Months | 95% CI | P-value |
| Individual expression | | | |
| HER-2 | | | |
| Negative | 43.56±8.36 | 27.17-59.94 | |
| 1+ | 66.75±8.99 | 49.16-84.38 | 0.04 |
| HER-4 | | | |
| Negative | 54.77±6.35 | 42.32-67.22 | |
| >50% | 22.00±0.00 | 22.00-22.00 | 0.04 |
| EGFRvIII | | | |
| Negative | 63.66±6.51 | 50.90-76.41 | |
| 1+ | 26.36±5.76 | 15.07-37.66 | <0.001 |
| Cytoplasmic | 28.70±5.82 | 17.29-40.11 | 0.002 |
| Nuclear | 6.00±0.00 | 6.00-6.00 | 0.002 |
| >5% staining | 26.50±6.37 | 14.02-38.98 | 0.01 |
| >10% staining | 21.50±11.30 | 6.00-43.64 | 0.03 |
| >20% staining | 12.33±9.33 | 6.00-30.63 | <0.01 |
| CD44 | | | |
| Negative | 55.92±7.21 | 41.80-70.05 | |
| Membranous | 37.09±8.41 | 20.60-53.58 | 0.03 |
| Cytoplasmic | 100.20±14.61 | 71.57-128.83 | 0.01 |
| EpCAM | | | |

| | | | |
|--------------------------|-------------|-------------|-------|
| Negative | 53.52±6.97 | 39.86-67.14 | |
| Nuclear | 25.67±48.59 | 6.74-48.59 | 0.05 |
| >50% staining | 6.00±0.00 | 6.00-6.00 | 0.002 |
| Co-expression | | | |
| wtEGFR + EGFRvIII | | | |
| Negative | 59.47±5.94 | 47.84-71.13 | |
| Positive | 21.00±8.90 | 6.55-38.45 | 0.004 |
| EGFRvIII + CD44 | | | |
| Negative | 56.65±5.80 | 45.27-68.03 | |
| Positive | 20.33±11.47 | 6.00-42.81 | 0.02 |
| EGFRvIII + EpCAM | | | |
| Negative | 58.12±6.19 | 45.97-70.24 | |
| Positive | 29.50±7.63 | 14.55-44.45 | 0.03 |
| EGFRvIII + Ki67 | | | |
| Negative | 60.00±6.25 | 47.94-72.96 | |
| Positive | 27.50±7.94 | 11.95-65.13 | 0.01 |
| wtEGFR + EGFRvIII + Ki67 | | | |
| Negative | 58.68±5.84 | 47.24-70.13 | |
| Positive | 19.40±10.73 | 6.00-40.42 | 0.009 |

The association between biomarker expression, at a cut of value of >5% of tumour cells with staining, and overall survival was determined using Kaplan-Meier curves. P<0.05 was considered to indicate a statistically significant difference. EGFRvIII, type-III deletion mutant EGFR; EpCAM, epithelial cell adhesion molecule; wt, wild-type.