

Table S4. Performances of marker combinations using logistic regression (TRAIN set; n=412)

| Global population (7 days – 36 months) | | | | | | | |
|--|-----------------------|-------------|-------------|-----|-----|--------------------|--------------------|
| Models (N=98; LR- = 0.3 and LR+ = maximum) | AUC [95% CI] | Sensitivity | Specificity | PPV | NPV | LR+ [95% CI] | LR- [95% CI] |
| Model 74: logMXA logTRAIL CRP logIL6 | 0.844 [0.803 ; 0.886] | 77% | 79% | 61% | 89% | 3.62 [2.88 ; 4.71] | 0.30 [0.21 ; 0.41] |
| Model 37: logIL6 logTRAIL logMXA | 0.830 [0.786 ; 0.873] | 77% | 79% | 60% | 89% | 3.57 [2.84 ; 4.62] | 0.30 [0.21 ; 0.41] |
| Model 52: CRP logMXA logTRAIL | 0.842 [0.800 ; 0.883] | 77% | 79% | 60% | 89% | 3.57 [2.76 ; 4.50] | 0.30 [0.22 ; 0.43] |
| Model 76: logMXA logTRAIL CRP NGAL | 0.842 [0.800 ; 0.883] | 77% | 79% | 60% | 89% | 3.57 [2.76 ; 4.50] | 0.30 [0.22 ; 0.43] |
| Model 78: logMXA logTRAIL logIL6 logIP_10 | 0.829 [0.786 ; 0.873] | 77% | 79% | 60% | 89% | 3.57 [2.84 ; 4.62] | 0.30 [0.21 ; 0.41] |
| Model 65: logMXA logPCT logTRAIL logIL6 | 0.831 [0.787 ; 0.875] | 77% | 78% | 60% | 89% | 3.54 [2.81 ; 4.59] | 0.30 [0.21 ; 0.42] |
| Model 66: logMXA logPCT logTRAIL CRP | 0.841 [0.799 ; 0.883] | 77% | 78% | 60% | 89% | 3.54 [2.81 ; 4.59] | 0.30 [0.21 ; 0.42] |
| Model 75: logMXA logTRAIL CRP logIP_10 | 0.842 [0.801 ; 0.883] | 77% | 78% | 60% | 89% | 3.45 [2.69 ; 4.34] | 0.30 [0.23 ; 0.43] |
| Model 57: NGAL logTRAIL logMXA | 0.826 [0.783 ; 0.869] | 77% | 76% | 58% | 89% | 3.19 [2.58 ; 4.07] | 0.30 [0.21 ; 0.42] |
| Model 77: logMXA logTRAIL logIL6 NGAL | 0.832 [0.788 ; 0.875] | 77% | 76% | 58% | 89% | 3.19 [2.58 ; 4.07] | 0.30 [0.21 ; 0.42] |
| Model 63: logMXA logPCT logTRAIL | 0.830 [0.787 ; 0.874] | 77% | 76% | 57% | 89% | 3.16 [2.49 ; 3.93] | 0.30 [0.22 ; 0.43] |
| Model 64: logMXA logPCT logTRAIL logIP_10 | 0.831 [0.787 ; 0.874] | 77% | 76% | 57% | 89% | 3.16 [2.55 ; 4.03] | 0.30 [0.21 ; 0.42] |
| Model 67: logMXA logPCT logTRAIL NGAL | 0.830 [0.786 ; 0.873] | 78% | 73% | 55% | 89% | 2.90 [2.37 ; 3.65] | 0.30 [0.21 ; 0.42] |
| Model 80: logMXA CRP NGAL logIP_10 | 0.821 [0.774 ; 0.869] | 78% | 73% | 55% | 89% | 2.86 [2.34 ; 3.58] | 0.30 [0.21 ; 0.42] |
| Model 69: logMXA logPCT logIP_10 logIL6 | 0.819 [0.770 ; 0.867] | 78% | 72% | 55% | 89% | 2.83 [2.26 ; 3.46] | 0.30 [0.22 ; 0.44] |
| Model 22: logMXA logTRAIL | 0.820 [0.776 ; 0.864] | 78% | 72% | 55% | 89% | 2.82 [2.26 ; 3.45] | 0.30 [0.22 ; 0.44] |
| Model 92: logPCT logIP_10 logTRAIL logIL6 | 0.813 [0.768 ; 0.858] | 79% | 71% | 54% | 89% | 2.71 [2.19 ; 3.29] | 0.30 [0.22 ; 0.44] |
| Model 79: logMXA logTRAIL NGAL logIP_10 | 0.825 [0.782 ; 0.868] | 79% | 71% | 53% | 89% | 2.69 [2.22 ; 3.33] | 0.30 [0.21 ; 0.42] |
| Model 85: logPCT NGAL logIP_10 logTRAIL | 0.807 [0.762 ; 0.852] | 79% | 71% | 53% | 89% | 2.68 [2.21 ; 3.33] | 0.30 [0.21 ; 0.42] |
| Model 68: logMXA logPCT logIP_10 NGAL | 0.819 [0.771 ; 0.867] | 79% | 70% | 53% | 89% | 2.65 [2.14 ; 3.21] | 0.30 [0.22 ; 0.44] |
| Model 62: logIP_10 logPCT logTRAIL | 0.805 [0.759 ; 0.850] | 79% | 70% | 53% | 89% | 2.62 [2.12 ; 3.17] | 0.30 [0.22 ; 0.44] |
| Model 94: NGAL CRP logTRAIL logIL6 | 0.822 [0.780 ; 0.864] | 79% | 69% | 52% | 89% | 2.56 [2.08 ; 3.09] | 0.31 [0.23 ; 0.45] |
| Model 29: logIL6 CRP logTRAIL | 0.822 [0.780 ; 0.863] | 80% | 69% | 52% | 89% | 2.53 [2.11 ; 3.10] | 0.30 [0.21 ; 0.42] |
| Model 93: logPCT CRP logTRAIL logIL6 | 0.818 [0.776 ; 0.861] | 80% | 68% | 52% | 89% | 2.53 [2.06 ; 3.04] | 0.30 [0.22 ; 0.44] |
| Model 98: CRP logTRAIL logIL6 logIP_10 | 0.826 [0.783 ; 0.869] | 80% | 68% | 51% | 89% | 2.48 [2.07 ; 3.03] | 0.30 [0.21 ; 0.43] |
| Model 90: logPCT logIP_10 CRP logTRAIL | 0.821 [0.777 ; 0.865] | 80% | 68% | 51% | 89% | 2.47 [2.02 ; 2.96] | 0.30 [0.22 ; 0.44] |
| Model 1: CRP | 0.780 [0.731 ; 0.829] | 80% | 68% | 51% | 89% | 2.45 [2.01 ; 2.93] | 0.30 [0.22 ; 0.44] |
| Model 23: logIP_10 logTRAIL | 0.785 [0.738 ; 0.831] | 81% | 65% | 50% | 89% | 2.30 [1.94 ; 2.79] | 0.30 [0.21 ; 0.43] |
| Model 45: CRP NGAL logTRAIL | 0.815 [0.773 ; 0.857] | 81% | 65% | 50% | 89% | 2.30 [1.90 ; 2.73] | 0.30 [0.22 ; 0.45] |
| Model 97: NGAL logTRAIL logIL6 logIP_10 | 0.809 [0.764 ; 0.853] | 81% | 65% | 50% | 89% | 2.30 [1.94 ; 2.79] | 0.30 [0.21 ; 0.43] |
| Model 86: logPCT NGAL logIP_10 CRP | 0.810 [0.763 ; 0.857] | 81% | 65% | 49% | 89% | 2.29 [1.89 ; 2.72] | 0.30 [0.22 ; 0.45] |
| Model 27: logTRAIL CRP | 0.815 [0.774 ; 0.857] | 81% | 65% | 49% | 89% | 2.28 [1.89 ; 2.70] | 0.30 [0.22 ; 0.45] |
| Model 70: logMXA logPCT logIP_10 CRP | 0.826 [0.779 ; 0.873] | 81% | 65% | 49% | 89% | 2.28 [1.92 ; 2.76] | 0.30 [0.20 ; 0.43] |
| Model 58: NGAL logTRAIL logPCT | 0.791 [0.746 ; 0.837] | 81% | 65% | 49% | 89% | 2.27 [1.87 ; 2.69] | 0.30 [0.22 ; 0.45] |
| Model 47: CRP NGAL logMXA | 0.818 [0.771 ; 0.865] | 81% | 64% | 49% | 89% | 2.26 [1.91 ; 2.73] | 0.30 [0.20 ; 0.44] |
| Model 51: CRP logMXA logIP_10 | 0.819 [0.771 ; 0.867] | 81% | 64% | 49% | 89% | 2.26 [1.91 ; 2.73] | 0.30 [0.20 ; 0.44] |
| Model 61: logIP_10 logMXA logTRAIL | 0.822 [0.779 ; 0.866] | 81% | 64% | 49% | 89% | 2.26 [1.91 ; 2.73] | 0.30 [0.20 ; 0.44] |
| Model 11: logPCT logTRAIL | 0.792 [0.746 ; 0.837] | 81% | 64% | 49% | 89% | 2.25 [1.86 ; 2.66] | 0.30 [0.22 ; 0.45] |
| Model 49: CRP logPCT logTRAIL | 0.814 [0.772 ; 0.856] | 81% | 64% | 49% | 89% | 2.25 [1.86 ; 2.66] | 0.30 [0.22 ; 0.45] |
| Model 89: logPCT NGAL CRP logTRAIL | 0.814 [0.772 ; 0.856] | 81% | 64% | 49% | 89% | 2.25 [1.86 ; 2.66] | 0.30 [0.22 ; 0.45] |
| Model 12: logPCT logIP_10 | 0.785 [0.736 ; 0.834] | 81% | 63% | 48% | 89% | 2.18 [1.85 ; 2.63] | 0.30 [0.20 ; 0.43] |
| Model 20: logMXA CRP | 0.815 [0.767 ; 0.863] | 82% | 63% | 48% | 89% | 2.18 [1.82 ; 2.57] | 0.30 [0.21 ; 0.45] |
| Model 34: logIL6 logTRAIL logIP_10 | 0.805 [0.760 ; 0.851] | 81% | 63% | 48% | 89% | 2.18 [1.85 ; 2.61] | 0.30 [0.20 ; 0.43] |
| Model 95: NGAL CRP logTRAIL logIP_10 | 0.819 [0.776 ; 0.862] | 81% | 63% | 48% | 89% | 2.18 [1.85 ; 2.61] | 0.30 [0.20 ; 0.43] |
| Model 50: CRP logPCT logIP_10 | 0.808 [0.760 ; 0.855] | 81% | 62% | 48% | 89% | 2.16 [1.80 ; 2.55] | 0.30 [0.22 ; 0.45] |
| Model 54: NGAL logIP_10 logTRAIL | 0.792 [0.747 ; 0.837] | 81% | 62% | 48% | 89% | 2.16 [1.80 ; 2.53] | 0.30 [0.22 ; 0.45] |
| Model 60: logIP_10 logMXA logPCT | 0.815 [0.767 ; 0.864] | 82% | 62% | 48% | 89% | 2.13 [1.81 ; 2.55] | 0.30 [0.20 ; 0.44] |
| Model 72: logMXA logPCT NGAL logIL6 | 0.809 [0.760 ; 0.857] | 82% | 62% | 48% | 89% | 2.13 [1.81 ; 2.55] | 0.30 [0.20 ; 0.44] |
| Model 82: logMXA CRP logIP_10 logIL6 | 0.826 [0.779 ; 0.873] | 82% | 62% | 48% | 89% | 2.12 [1.81 ; 2.54] | 0.30 [0.20 ; 0.44] |
| Model 35: logIL6 logTRAIL logPCT | 0.800 [0.755 ; 0.845] | 82% | 61% | 47% | 89% | 2.09 [1.75 ; 2.44] | 0.30 [0.21 ; 0.45] |
| Model 26: logTRAIL logIL6 | 0.800 [0.755 ; 0.845] | 82% | 61% | 47% | 89% | 2.08 [1.78 ; 2.48] | 0.30 [0.20 ; 0.43] |
| Model 53: CRP logIP_10 logTRAIL | 0.819 [0.776 ; 0.862] | 82% | 61% | 47% | 89% | 2.08 [1.75 ; 2.43] | 0.30 [0.21 ; 0.45] |
| Model 39: logIL6 logIP_10 logPCT | 0.799 [0.750 ; 0.847] | 82% | 60% | 46% | 89% | 2.03 [1.74 ; 2.42] | 0.30 [0.20 ; 0.44] |
| Model 55: NGAL logIP_10 logPCT | 0.793 [0.745 ; 0.841] | 82% | 60% | 46% | 89% | 2.03 [1.74 ; 2.42] | 0.30 [0.20 ; 0.44] |
| Model 88: logPCT NGAL logIL6 logTRAIL | 0.799 [0.754 ; 0.844] | 82% | 60% | 46% | 89% | 2.03 [1.74 ; 2.42] | 0.30 [0.20 ; 0.44] |
| Model 91: logPCT logIP_10 CRP logIL6 | 0.813 [0.766 ; 0.860] | 82% | 60% | 46% | 89% | 2.03 [1.74 ; 2.42] | 0.30 [0.20 ; 0.44] |
| Model 36: logIL6 logTRAIL NGAL | 0.800 [0.755 ; 0.845] | 82% | 60% | 46% | 89% | 2.03 [1.74 ; 2.41] | 0.30 [0.20 ; 0.44] |
| Model 46: CRP NGAL logIP_10 | 0.795 [0.747 ; 0.843] | 82% | 60% | 46% | 89% | 2.03 [1.71 ; 2.36] | 0.30 [0.21 ; 0.46] |
| Model 73: logMXA logPCT CRP logIL6 | 0.821 [0.775 ; 0.868] | 82% | 59% | 46% | 89% | 2.00 [1.68 ; 2.33] | 0.30 [0.21 ; 0.46] |
| Model 17: NGAL logTRAIL | 0.786 [0.741 ; 0.832] | 83% | 57% | 45% | 89% | 1.93 [1.67 ; 2.28] | 0.30 [0.20 ; 0.44] |
| Model 96: NGAL CRP logIL6 logIP_10 | 0.810 [0.763 ; 0.857] | 83% | 57% | 45% | 89% | 1.93 [1.64 ; 2.24] | 0.30 [0.21 ; 0.46] |
| Model 15: NGAL CRP | 0.778 [0.730 ; 0.826] | 83% | 57% | 45% | 89% | 1.92 [1.62 ; 2.22] | 0.30 [0.21 ; 0.47] |
| Model 81: logMXA CRP NGAL logIL6 | 0.821 [0.774 ; 0.868] | 83% | 56% | 45% | 89% | 1.91 [1.65 ; 2.25] | 0.30 [0.20 ; 0.45] |
| Model 32: logIL6 CRP logMXA | 0.820 [0.773 ; 0.867] | 83% | 56% | 45% | 89% | 1.89 [1.64 ; 2.23] | 0.30 [0.20 ; 0.45] |
| Model 13: logPCT logMXA | 0.804 [0.755 ; 0.853] | 83% | 56% | 45% | 89% | 1.89 [1.60 ; 2.19] | 0.30 [0.21 ; 0.47] |
| Model 48: CRP logPCT logMXA | 0.819 [0.772 ; 0.866] | 83% | 56% | 45% | 89% | 1.89 [1.63 ; 2.23] | 0.30 [0.20 ; 0.45] |
| Model 71: logMXA logPCT NGAL CRP | 0.820 [0.773 ; 0.867] | 83% | 56% | 45% | 89% | 1.89 [1.63 ; 2.23] | 0.30 [0.20 ; 0.45] |
| Model 33: logIL6 CRP logIP_10 | 0.808 [0.760 ; 0.855] | 83% | 56% | 45% | 89% | 1.89 [1.60 ; 2.18] | 0.31 [0.22 ; 0.47] |
| Model 31: logIL6 CRP NGAL | 0.783 [0.734 ; 0.832] | 84% | 54% | 44% | 89% | 1.83 [1.59 ; 2.14] | 0.30 [0.20 ; 0.45] |
| Model 3: logTRAIL | 0.785 [0.739 ; 0.831] | 84% | 54% | 44% | 89% | 1.83 [1.56 ; 2.11] | 0.30 [0.21 ; 0.47] |
| Model 40: logIL6 logIP_10 NGAL | 0.782 [0.733 ; 0.831] | 84% | 54% | 44% | 89% | 1.83 [1.59 ; 2.14] | 0.30 [0.20 ; 0.45] |
| Model 44: CRP NGAL logPCT | 0.774 [0.726 ; 0.822] | 84% | 54% | 44% | 89% | 1.83 [1.59 ; 2.14] | 0.30 [0.20 ; 0.45] |
| Model 87: logPCT NGAL logIL6 CRP | 0.780 [0.731 ; 0.829] | 84% | 54% | 44% | 89% | 1.83 [1.56 ; 2.11] | 0.30 [0.21 ; 0.47] |
| Model 30: logIL6 CRP logPCT | 0.780 [0.731 ; 0.829] | 84% | 54% | 44% | 89% | 1.82 [1.55 ; 2.09] | 0.30 [0.21 ; 0.47] |
| Model 21: logMXA logIL6 | 0.792 [0.742 ; 0.843] | 84% | 53% | 43% | 89% | 1.80 [1.57 ; 2.10] | 0.30 [0.19 ; 0.46] |
| Model 42: logIL6 logMXA logPCT | 0.806 [0.757 ; 0.855] | 84% | 53% | 43% | 89% | 1.80 [1.56 ; 2.10] | 0.30 [0.19 ; 0.46] |
| Model 59: NGAL logMXA logPCT | 0.807 [0.758 ; 0.855] | 84% | 53% | 43% | 89% | 1.80 [1.56 ; 2.10] | 0.30 [0.19 ; 0.46] |
| Model 28: logIL6 CRP | 0.782 [0.733 ; 0.831] | 85% | 52% | 43% | 89% | 1.75 [1.53 ; 2.03] | 0.30 [0.19 ; 0.46] |
| Model 9: logPCT CRP | 0.775 [0.727 ; 0.823] | 85% | 51% | 43% | 89% | 1.74 [1.52 ; 2.02] | 0.30 [0.19 ; 0.46] |
| Model 25: logIP_10 logIL6 | 0.769 [0.719 ; 0.820] | 85% | 49% | 42% | 89% | 1.67 [1.47 ; 1.92] | 0.30 [0.19 ; 0.46] |
| Model 16: NGAL logIL6 | 0.726 [0.673 ; 0.778] | 89% | 35% | 37% | 89% | 1.38 [1.25 ; 1.54] | 0.30 [0.17 ; 0.51] |
| Model 2: logIL6 | 0.714 [0.660 ; 0.767] | 89% | 35% | 37% | 89% | 1.38 [1.25 ; 1.54] | 0.30 [0.17 ; 0.51] |
| Model 43: logIL6 NGAL logPCT | 0.736 [0.684 ; 0.789] | 89% | 35% | 37% | 89% | 1.38 [1.25 ; 1.54] | 0.30 [0.17 ; 0.51] |
| Model 8: logPCT NGAL | 0.718 [0.664 ; 0.771] | 90% | 32% | 36% | 89% | 1.33 [1.19 ; 1.45] | 0.31 [0.19 ; 0.57] |
| Model 19: logMXA logIP_10 | 0.765 [0.711 ; 0.819] | 91% | 31% | 36% | 89% | 1.31 [1.20 ; 1.45] | 0.30 [0.16 ; 0.53] |
| Model 38: logIL6 logIP_10 logMXA | 0.800 [0.750 ; 0.850] | 91% | 31% | 36% | 89% | 1.31 [1.20 ; 1.45] | 0.30 [0.16 ; 0.53] |
| Model 5: logMXA | 0.758 [0.703 ; 0.812] | 91% | 31% | 36% | 89% | 1.31 [1.20 ; 1.45] | 0.30 [0.16 ; 0.53] |
| Model 83: logMXA NGAL logIP_10 logIL6 | 0.807 [0.758 ; 0.856] | 91% | 31% | 36% | 89% | 1.31 [1.18 ; 1.43] | 0.30 [0.19 ; 0.58] |
| Model 41: logIL6 logMXA NGAL | 0.799 [0.749 ; 0.848] | 92% | 28% | 35% | 89% | 1.27 [1.17 ; 1.40] | 0.30 [0.16 ; 0.55] |
| Model 56: NGAL logIP_10 logMXA | 0.788 [0.736 ; 0.840] | 92% | 28% | 35% | 89% | 1.27 [1.17 ; 1.40] | 0.30 [0.16 ; 0.55] |
| Model 6: NGAL | 0.673 [0.617 ; 0.729] | 92% | 27% | 35% | 89% | 1.26 [1.16 ; 1.38] | 0.30 [0.16 ; 0.55] |
| Model 14: NGAL logMXA | 0.782 [0.730 ; 0.834] | 92% | 25% | 35% | 89% | 1.24 [1.14 ; 1.35] | 0.30 [0.15 ; 0.57] |
| Model 10: logPCT logIP_10 | 0.731 [0.678 ; 0.784] | 93% | 25% | 34% | 89% | 1.23 [1.13 ; 1.34] | 0.30 [0.15 ; 0.57] |
| Model 84: logPCT NGAL logIP_10 logIL6 | 0.803 [0.755 ; 0.851] | 95% | 16% | 33% | 89% | 1.14 [1.07 ; 1.22] | 0.30 [0.13 ; 0.67] |
| Model 18: NGAL logIP_10 | 0.740 [0.688 ; 0.792] | 95% | 16% | 33% | 89% | 1.14 [1.07 ; 1.22] | 0.30 [0.13 ; 0.67] |
| Model 24: logIP_10 CRP | 0.786 [0.737 ; 0.835] | 95% | 16% | 33% | 89% | 1.14 [1.07 ; 1.22] | 0.30 [0.13 ; 0.67] |
| Model 7: logPCT | 0.706 [0.651 ; 0.761] | 97% | 11% | 32% | 89% | 1.09 [1.06 ; 1.20] | 0.30 [0.11 ; 0.67] |
| Model 4: logIP_10 | 0.678 [0.621 ; 0.735] | 99% | 3% | 30% | 89% | 1.02 [1.00 ; 1.05] | 0.29 [0.03 ; 2.04] |

No models reached the targeted performance criteria. The best performing model in the TEST set (model 57) is highlighted in red.

Abbreviations: AUC, area under the curve; CI, confidence interval; LR-, negative likelihood ratio; LR+, positive likelihood ratio; NPV, negative predictive value; PPV, positive predictive value.