**Supplementary figure 1.** Analysis of the selected promoter and exon locations identified through peak calling analysis of the ChIP-seq data on monocytes from patients with no early recurrence (NR) and with early recurrence (R). A) Total number of peaks at selected locations. B) Mean peak scores at the selected locations.

**Supplementary figure 2.** Quantitave RT-PCR of TNF and TLR4 mRNA in monocytes from NMIBC patients. Each Ct value was calculated relative to the corresponding patient’s GAPDH Ct value.

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| **Supplementary Table 1. Analysis of TNFα and TLR4, two-sided t-test, comparing NER and ER patient groups at different time points** | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **NER (n=3) vs ER (n=4), df = 5** | | | | | | | | | |
|  | **Week 1** | | | | | **Week 6** | | | | |
| **Variable** | **mean** | **std** | **t** | **d (CI)** | **p** | **mean** | **std** | **t** | **d (CI)** | **p** |
| **TNF** |  |  | 4.14\* | 0.29 (-1.23, 1.79) | 0.048 |  |  | 2.25 | 1.72 (-0.16, 3.49) | 0.074 |
| NER | 9.73 | 2.47 |  |  |  | 7.91 | 1.28 |  |  |  |
| ER | 3.73 | 0.50 |  |  |  | 4.88 | 2.02 |  |  |  |
| **TLR4** |  |  | 5.11 | 1.34 (1.08, 6.65) | 0.004 |  |  | 0.26 | 0.20 (-1.31, 1.69) | 0.804 |
| NER | 7.33 | 1.97 |  |  |  | 4.21 | 1.04 |  |  |  |
| ER | 2.12 | 0.61 |  |  |  | 3.77 | 2.73 |  |  |  |
| Abbreviations: early recurrence (ER), no early recurrence (NER), degrees of freedom (df), standard deviation (std), Cohen's D (d), Confidence Interval (CI), p-value (p). \* The *t* and the *df* (=2.13) were adjusted because variances were not equal) | | | | | | | | | | |

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| **Supplementary Table 2. Analysis of peaks, two-sided t-test, comparing between NER and ER patient groups at different time points for total number of peaks and average peak score.** | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **All peak locations, NER (n=3) vs ER (n=4), df = 5** | | | | | | | | | |
|  | **Week 1** | | | | | **Week 6** | | | | |
| **Variable** | **mean** | **std** | **t** | **d (CI)** | **p** | **mean** | **std** | **t** | **d (CI)** | **p** |
| **# peaks** |  |  | 0.424\* | 0.29 (-1.23, 1.79) | 0.691 |  |  | 1.64 | 1.25 (-0.47, 2.88) | 0.162 |
| NER | 13113.67 | 1108.36 |  |  |  | 14773.00 | 3655.31 |  |  |  |
| ER | 12591.75 | 2105.31 |  |  |  | 11011.50 | 2470.82 |  |  |  |
| **mean peak score** |  |  | 1.593 | 1.22 (-0.50, 2.84) | 0.086 |  |  | 1.11 | 0.84 (-0.77, 2.39) | 0.319 |
| NER | 251.52 | 130.99 |  |  |  | 194.31 | 96.37 |  |  |  |
| ER | 130.07 | 71.88 |  |  |  | 135.18 | 44.60 |  |  |  |
|  | **Selected peak locations, NER (n=3) vs ER (n=4), df = 5** | | | | | | | | | |
| **# peaks** |  |  | 3.62 | 2.76 (0.47, 4.95) | 0.015 |  |  | 7.05 | 5.39 (1.81, 8.92) | 0.001 |
| NER | 3016.00 | 974.57 |  |  |  | 3326.00 | 492.74 |  |  |  |
| ER | 1094.75 | 414.95 |  |  |  | 780.50 | 458.50 |  |  |  |
| **mean peak score** |  |  | 2.74 | 2.10 (.08, 4.00) | 0.041 |  |  | 2.85 | 2.18 (0.13, 4.11) | 0.036 |
| NER | 200.68 | 116.37 |  |  |  | 191.46 | 117.88 |  |  |  |
| ER | 39.91 | 28.03 |  |  |  | 25.62 | 20.26 |  |  |  |
| Abbreviations: early recurrence (ER), no early recurrence (NER), degrees of freedom (df), standard deviation (std), Cohen's D (d), Confidence Interval (CI), p-value (p). \* The *t* and the *df* (=4.67) were adjusted because variances were not equal) | | | | | | | | | | |

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| **Supplementary Table 3. Validation results, one-sided t-test, comparing between NER and ER patient groups at different time points for selected genomic locations.** | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  | **Set 1, NER (n=3) vs ER (n=2), df = 3** | | | | | | | | | |
|  | **Week 1** | | | | | **Week 6** | | | | |
| **Variable** | **mean** | **std** | **t** | **d (CI)** | **p** | **mean** | **std** | **t** | **d (CI)** | **p** |
| FZD5 |  |  | 2.43 | 2.22 (-0.32, 4.60) | 0.050 |  |  | 0.46 | 0.42 (-1.43, 2.21) | 0.339 |
| NER | 7.14 | 2.22 |  |  |  | 5.18 | 1.14 |  |  |  |
| ER | 2.99 | 0.81 |  |  |  | 4.45 | 2.55 |  |  |  |
| LEPR |  |  | 2.53 | 2.31 (-0.28, 4.74) | 0.040 |  |  | 1.36 | 1.24 (-0.86, 3.19) | 0.134 |
| NER | 5.48 | 1.83 |  |  |  | 4.53 | 1.65 |  |  |  |
| ER | 1.93 | 0.64 |  |  |  | 2.65 | 1.24 |  |  |  |
| IRS2 |  |  | 67.36 | 61.49 (16.45, 108.57) | <.001 |  |  | 0.63 | 0.57 (-1.31, 2.37) | 0.287 |
| NER | 2.01 | 0.03 |  |  |  | 1.72 | 0.83 |  |  |  |
| ER | 0.59 | 0.01 |  |  |  | 1.31 | 0.34 |  |  |  |
| AKT3 |  |  | 2.66 | 2.43 (-0.216, 4.93) | 0.040 |  |  | 1.51 | 1.37 (-0.78, 3.37) | 0.115 |
| NER | 8.92 | 2.62 |  |  |  | 6.55 | 1.89 |  |  |  |
| ER | 3.58 | 0.90 |  |  |  | 4.21 | 1.24 |  |  |  |
| MET |  |  | 2.93 | 2.68 (-0.10, 5.31) | 0.030 |  |  | 0.35 | 0.32 (-1.51, 2.10) | 0.373 |
| NER | 3.06 | 0.78 |  |  |  | 2.72 | 1.06 |  |  |  |
| ER | 1.34 | 0.10 |  |  |  | 2.44 | 0.40 |  |  |  |
|  | **Set 2, NER (n=4) vs ER (n=3), df = 5** | | | | | | | | | |
| FZD5 |  |  | -1.60 | -1.22 (-2.85, 0.49) | 0.085 |  |  | 1.25 | 0.95 (-0.69, 2.51) | 0.134 |
| NER | 8.06 | 2.47 |  |  |  | 11.61 | 5.96 |  |  |  |
| ER | 11.61 | 5.96 |  |  |  | 6.73 | 3.55 |  |  |  |
| LEPR |  |  | -4.66 | -3.56 (-6.13, -0.91) | 0.003 |  |  | 0.88 | 0.67 (-0.91, 2.19) | 0.210 |
| NER | 3.74 | 1.22 |  |  |  | 7.30 | 3.35 |  |  |  |
| ER | 7.30 | 3.35 |  |  |  | 5.42 | 1.66 |  |  |  |
| IRS2 |  |  | -0.98 | -0.75 (-2.28, 0.85) | 0.185 |  |  | 1.04 | 0.79 (-0.81, 2.33) | 0.174 |
| NER | 1.51 | 0.61 |  |  |  | 3.06 | 2.40 |  |  |  |
| ER | 3.06 | 2.40 |  |  |  | 1.50 | 1.02 |  |  |  |
| AKT3 |  |  | -0.60 | -0.46 (-1.96, 1.08) | 0.287 |  |  | 1.68 | 1.28 (-0.45, 2.92) | 0.077 |
| NER | 10.22 | 4.11 |  |  |  | 15.29 | 8.26 |  |  |  |
| ER | 15.29 | 8.26 |  |  |  | 6.87 | 2.42 |  |  |  |
| MET |  |  | -0.84 | -0.64 (-2.16, 0.93) | 0.220 |  |  | 1.30 | 0.99 (-0.66, 2.56) | 0.125 |
| NER | 4.83 | 1.71 |  |  |  | 7.58 | 5.52 |  |  |  |
| ER | 7.58 | 5.52 |  |  |  | 3.30 | 0.86 |  |  |  |
| Abbreviations: early recurrence (ER), no early recurrence (NER), degrees of freedom (df), standard deviation (std), Cohen's D (d), Confidence Interval (CI), p-value (p). | | | | | | | | | | |