

**Supplemental Table 1:** Details of prospective clinical trials on which patients analyzed in this study were treated.

<b>Trial</b>	<b>Title</b>	<b>Radiation</b>	<b>Concurrent Chemotherapy</b>	<b>Adjuvant Chemotherapy</b>
2003.073 (NCT: n/a)	A Phase I/II Randomized Trial in Radiation Dose Escalation and Timing of Concurrent Chemotherapy for Patients with Stage III Unresectable/Inoperable Non-small Cell Lung Cancer.	2 Gy M-W 2.35-3.8 Gy Th-F ≤15% NTCP for Grade ≥ 2 RILT (Target EQD2 between 64-89 Gy in 30 fractions)	Paclitaxel 45 mg/m <sup>2</sup> Carboplatin AUC 2	Paclitaxel 200 mg/m <sup>2</sup> Carboplatin AUC 6
2003.076 (NCT: n/a)	A Pilot Study to Evaluate the Impact of Multiple Functional Images and Molecular Markers on Radiation Treatment Planning and Radiation Outcome and Lung Toxicity Prediction.	Determined by radiation oncologist, 2 Gy daily to cumulative dose <74 Gy	Per treating physician	Per treating physician
2006.040 (NCT00603057)	Using Functional Image and Circulating Molecular Markers to Predict Tumor Response and Lung Toxicity in Treatment of Lung Cancer.	Determined by radiation oncologist 2 Gy daily to cumulative dose <74 Gy	Per treating physician	Per treating physician
2007.123 (NCT01190527)	Using FDG-PET Acquired During the Course of Radiation Therapy to Individualize Adaptive Radiation Dose Escalation in Patients with Non-Small Cell Lung Cancer.	2.1-2.85 Gy daily initially, then escalated per protocol ≤17.2% NTCP for Grade ≥ 2 RILT (Target dose EQD2 between 64-92 Gy in 30 fractions)	Paclitaxel 45 mg/m <sup>2</sup> Carboplatin AUC 2	Paclitaxel 200 mg/m <sup>2</sup> Carboplatin AUC 6

AUC = Area under curve. NTCP = normal tissue complication probability. EQD2 = equivalent to daily 2-Gy fractions. Gy = Gray.

**Supplemental Table 2:** MiRNA species included in qRT-PCR assay.

let-7a-5p	miR-192-5p	miR-27a-3p	miR-145-5p
let-7c	miR-195-5p	miR-296-5p	miR-148a-3p
miR-106b-5p	miR-19a-3p	miR-29a-3p	miR-15a-5p
miR-10b-5p	miR-19b-3p	miR-30d-5p	miR-193a-5p
miR-122-5p	miR-200b-3p	miR-34a-5p	miR-26b-5p
miR-124-3p	miR-200c-3p	miR-375	miR-30e-5p
miR-125b-5p	miR-205-5p	miR-423-5p	miR-374a-5p
miR-126-3p	miR-20a-5p	miR-574-3p	miR-7-5p
miR-134	miR-21-5p	miR-885-5p	miR-103a-3p
miR-143-3p	miR-210	miR-92a-3p	miR-15b-5p
miR-146a-5p	miR-221-3p	miR-93-5p	miR-16-5p
miR-150-5p	miR-222-3p	miR-100-5p	miR-191-5p
miR-155-5p	miR-223-3p	miR-10a-5p	miR-22-3p
miR-17-5p	miR-224-5p	miR-128	miR-24-3p
miR-17-3p	miR-23a-3p	miR-130b-3p	miR-26a-5p
miR-18a-5p	miR-25-3p		

**Supplemental Table 3:** Patient and disease characteristics of the 173 patients treated on the 4 prospective institutional clinical trials referenced in the main text.

<b>Parameter</b>	<b>Value</b>
Age (years)	
Mean (Std. Dev.)	66.6 (9.7)
Median	65.7
KPS	
Mean (Std. Dev.)	84 (10.1)
Median	85
Sex (n(%))	
Male	65 (78.3%)
Female	18 (21.7%)
Smoking Status (n(%))	
Non-smoker	7 (4.0%)
Former-smoker	82 (47.4%)
Current-smoker	73 (42.2%)
Unknown	11 (6.4%)
TNM Stage (n(%))	
I	34 (19.6%)
II	23 (13.3%)
III	115 (66.5%)
IV	1 (0.6%)

KPS = Karnofsky performance status. Std. Dev. = standard deviation.