

**Supplemental Table S1. Clinicopathological characteristics of study populations**

	Test cohort (n=40)				Validation cohort (n=63)			
	True responders (n=16)	True non-responders (n=24)	Predicted responders (n=15)	Predicted non-responders (n=25)	True responders (n=18)	True non-responders (n=45)	Predicted responders (n=20)	Predicted non-responders (n=43)
Age-year								
Mean (range)	57.1 (47-66)	59.8 (49-68)	56.7 (47-66)	59.8 (49-67)	58.3 (32-71)	59.7 (32-72)	55.8 (32-67)	60.9 (32-72)
Gender-no. (%)								
Male	12 (75)	11 (46)	13 (87)	10 (40)	7 (39)	21 (47)	6 (30)	22 (51)
Female	4 (25)	13 (54)	2 (13)	15 (60)	11 (61)	24 (53)	14 (70)	21 (49)
Smoking (pack year)-no. (%)								
Never smoker	4 (25)	12 (50)	2 (13)	14 (56)	10 (56)	23 (51)	8 (40)	25 (58)
<20	1 (6)	2 (8)	2 (13)	1 (4)	5 (28)	5 (11)	6 (30)	4 (9)
≥20	11 (69)	10 (42)	11 (73)	10 (40)	3 (16)	17 (38)	6 (30)	14 (33)
TP53 genotype-no. (%)								
Arg/Arg	6 (37)	14 (59)	8 (53)	12 (48)	6 (33)	18 (40)	5 (25)	19 (44)
Arg/Pro	7 (44)	9 (37)	6 (40)	10 (40)	10 (56)	23 (51)	11 (55)	22 (51)
Pro/Pro	3 (19)	1 (4)	1 (7)	3 (12)	2 (11)	4 (9)	4 (20)	2 (5)
Driver-gene mutation-no. (%)								
negative	6 (37)	4 (16)	5 (33)	5 (20)	7 (39)	21 (47)	8 (40)	20 (47)
positive	10 (63)	20 (84)	10 (67)	20 (80)	11 (61)	24 (53)	12 (60)	23 (53)
EGFR mutation	7	12	8	11	8	20	10	18
KRAS mutation	0	3	0	3	3	4	2	5
HER2 mutation	2	1	1	2	0	0	0	0
BRAF mutation	0	1	0	1	0	0	0	0
ALK fusion	1	1	1	1	NE	NE	NE	NE
RET fusion	0	0	0	0	NE	NE	NE	NE
ROS1 fusion	0	2	0	2	NE	NE	NE	NE
TNM Stage at initial diagnosis-no. (%)								
IA	0	6 (25)	0	6 (24)	1 (6)	4 (9)	2 (10)	3 (7)
IB	3 (19)	2 (8)	1 (7)	4 (16)	5 (28)	7 (16)	4 (20)	8 (19)
IIA	1 (6)	3 (13)	0	4 (16)	2 (11)	8 (18)	3 (15)	7 (16)
IIB	1 (6)	1 (4)	1 (7)	1 (4)	1 (6)	1 (2)	0	2 (5)
IIIA	11 (69)	7 (29)	12 (80)	6 (24)	7 (39)	19 (42)	8 (40)	18 (42)
IIIB	0	2 (8)	1 (7)	1 (4)	0	0	0	0
IV	0	3 (13)	0	3 (12)	2 (11)	6 (13)	3 (15)	5 (12)
TNM Stage at recurrence-no. (%)								
IA	0	0	0	0	0	0	0	0
IB	0	0	0	0	0	0	0	0
IIA	0	0	0	0	0	0	0	0
IIB	0	0	0	0	0	0	0	0
IIIA	0	0	0	0	0	0	0	0
IIIB	0	2 (8)	0	2 (8)	0	3 (7)	1 (5)	2 (5)
IV	16 (100)	22 (92)	15 (100)	23 (92)	18 (100)	42 (93)	19 (95)	41 (95)
Recurrent portion-no. (%)								
local/regional	0	2 (8)	0	2 (8)	0	3 (7)	1 (5)	2 (5)
metastasis	16 (100)	22 (92)	15 (100)	23 (92)	18 (100)	42 (93)	19 (95)	41 (95)
M1a	9	13	8	14	8	20	8	20
M1b	7	9	7	9	10	22	11	21
Platinum-based regimens-no. (%)								
Platinum + Paclitaxel	12 (75)	18 (75)	11 (73)	19 (76)	13 (72)	29 (64)	12 (60)	30 (70)
Platinum + Gemcitabine	3 (19)	6 (25)	4 (27)	5 (20)	3 (17)	11 (25)	7 (35)	7 (16)
Platinum + Docetaxel	0	0	0	0	0	4 (9)	0	4 (9)
Platinum + Pemetrexed	0	0	0	0	2 (11)	0	1 (5)	1 (2)
Platinum + Vinorelbine	1 (6)	0	0	1 (4)	0	1 (2)	0	1 (2)
PS-no. (%)								
0	8 (50)	10 (42)	6 (40)	12 (48)	10 (56)	19 (42)	10 (50)	19 (44)
1	8 (50)	13 (54)	9 (60)	12 (48)	8 (44)	24 (53)	9 (45)	23 (53)
2	0	0	0	0	0	2 (4)	1 (5)	1 (2)
Unknown	0	1 (4)	0	1 (4)	0	0	0	0
Frequency of cycle-no. (%)								
1	0	1 (4)	0	1 (4)	1 (6)	5 (11)	2 (10)	4 (9)
2	0	6 (25)	1 (7)	5 (20)	1 (6)	18 (40)	4 (20)	15 (35)
3	1 (6)	6 (25)	1 (7)	6 (24)	0	9 (20)	2 (10)	7 (16)
4	13 (81)	10 (42)	11 (73)	12 (48)	14 (76)	12 (27)	9 (45)	17 (40)
5	0	1 (4)	0	1 (4)	1 (6)	1 (2)	2 (10)	0
6	2 (13)	0	2 (13)	0	1 (6)	0	1 (5)	0
RECIST-no. (%)								
CR	1 (6)	0	1 (7)	0	0	0	0	0
PR	15 (94)	0	11 (73)	4 (16)	18 (100)	0	12 (60)	6 (14)
SD	0	21 (87)	2 (13)	19 (76)	0	35 (78)	4 (20)	31 (72)
PD	0	3 (13)	1 (7)	2 (8)	0	10 (22)	4 (20)	6 (14)
pre-treatment-no. (%)								
Gefitinib	3 (19)	4 (16)	3 (20)	4 (16)	1 (6)	17 (38)	5 (25)	13 (30)
RT	2 (13)	1 (4)	3 (20)	0	2 (11)	1 (2)	0	3 (7)
Bone RT	1 (6)	0	1 (7)	0	1 (6)	6 (13)	2 (10)	5 (12)
WBRT	2 (13)	2 (8)	2 (13)	2 (8)	1 (6)	2 (4)	2 (10)	1 (2)
γ knife	0	1 (4)	0	1 (4)	1 (6)	2 (4)	2 (10)	1 (2)

Abbreviations: Platinum, cisplatin or carboplatin; PD, performance status; CR, complete response; PR, partial response; SD, stable disease; PD, progressive disease; NE, not examined. RT, radiation therapy, WBRT, whole brain radiation therapy.