

Supplementary table 1. Details of specific chemotherapy

Code	Chemotherapy before sampling	2p gain	7p gain	intravenous chemotherapy before sampling	times	intra-arterial chemotherapy before sampling	times	intravitreal chemotherapy before sampling	times
1	no	yes	yes	no	0	no	0	no	0
2	yes	no	no	yes	1	yes	1	no	0
3	no	yes	no	no	0	no	0	no	0
4	no	yes	no	no	0	no	0	no	0
5	yes	yes	no	yes	2	yes	5	yes	1
6	yes	yes	no	yes	1	no	0	no	0
7	no	yes	no	no	0	no	0	no	0
8	yes	no	no	yes	8	yes	1	yes	4
9	no	yes	yes	no	0	no	0	no	0
10	no	yes	yes	no	0	no	0	no	0
11	no	yes	yes	no	0	no	0	no	0
12	no	yes	no	no	0	no	0	no	0
13	no	yes	yes	no	0	no	0	no	0
14	no	yes	yes	no	0	no	0	no	0
15	yes	no	no	yes	1	yes	1	no	0
16	yes	no	no	yes	6	no	0	yes	0
17	yes	no	no	yes	4	yes	3	no	0
18	yes	no	no	yes	1	yes	2	no	0
19	yes	no	yes	yes	3	yes	5	no	0
20	no	yes	yes	no	0	no	0	no	0
21	yes	no	no	yes	1	yes	5	no	0
22	yes	no	no	yes	1	no	0	no	0
23	yes	no	no	yes	8	yes	7	no	0
24	yes	yes	no	yes	3	yes	3	yes	3
25	yes	no	no	yes	4	yes	5	yes	5
26	no	yes	yes	no	0	no	0	no	0
27	no	yes	yes	no	0	no	0	no	0
28	yes	no	no	no	0	yes	3	yes	2
29	no	no	no	no	0	no	0	no	0
30	yes	yes	no	yes	1	no	0	no	0
31	no	yes	yes	no	0	no	0	no	0
32	yes	no	no	yes	6	yes	4	yes	1
33	no	yes	yes	no	0	no	0	no	0
34	yes	no	no	yes	1	no	0	no	0
35	yes	no	no	yes	2	yes	4	yes	1
36	yes	no	yes	yes	3	yes	3	no	0
37	no	yes	yes	no	0	no	0	no	0
38	no	yes	no	no	0	no	0	no	0
39	yes	yes	no	no	0	yes	2	no	0

40	yes	no	yes	yes	1	no	0	no	0
41	no	yes	yes	no	0	no	0	no	0
42	no	no	no	no	0	no	0	no	0
43	yes	yes	no	yes	6	no	0	yes	1
44	yes	yes	no	yes	6	yes	1	yes	1
45	yes	yes	no	yes	6	yes	6	yes	4
46	yes	no	no	yes	6	yes	7	yes	10
47	yes	no	no	yes	9	no	0	no	0
48	yes	yes	yes	no	0	yes	1	no	0
49	no	no	no	no	0	no	0	no	0
50	yes	no	no	yes	2	yes	3	no	0
51	yes	yes	yes	yes	6	no	0	no	0
52	yes	no	yes	yes	4	no	0	no	0
53	yes	yes	no	yes	8	no	0	yes	1
54	no	no	yes	no	0	no	0	no	0
55	yes	no	no	yes	1	no	0	no	0
56	no	no	no	no	0	no	0	no	0
57	yes	no	no	no	0	yes	4	yes	1
58	yes	no	no	yes	4	yes	3	no	0

Supplementary Table 2. Association of chemotherapy and recurrent SCNVs

	Candidate genes	Total N=58 (%)	Sample collected after primary enucleation N=23(%)	Sample collected after chemotherapy N=35(%)	P Value
1q32 gain	MDM4, KIF14	51(87)	21(91)	30(86)	0.692
2p24 gain	MYCN ⁺	29(50)	18(78)	11(31)	0.001 ***
6p22 gain	DEK, E2F3	44(76)	16(70)	28(80)	0.532
7q31-34 gain	MET, BRAF ⁺	20(35)	14(61)	6(17)	0.001 ***
11q22-24 loss	ATM [#]	11(19)	2(9)	9(26)	0.172
13q31-34gain	C13orf25 (MIR17HG)	22(38)	12(52)	10(29)	0.098
13q14-22loss	RB1 [#]	4(7)	2(9)	2(6)	1.000
16q22-24 loss	CDH11, RBL2	40(69)	19(83)	21(60)	0.087
17q21-25 gain	CDK3	31(53)	13(57)	18(51)	0.791
19q12-13 loss	AKT2	25(43)	11(48)	14(40)	0.597

*P < 0.05, **P < 0.01, ***P < 0.001. ⁺: reported oncogene #: reported tumor suppressor

Supplementary Table 3. Comparison of SCNA between primary and secondary enucleated eyes

	Total N=41 (%)	Primary enucleated eyes N=24 (%)	Secondary enucleated eyes N=17(%)	P Value
1q32 gain	35 (85)	22 (92)	13 (76)	0.212
2p24 gain	24 (38)	18 (75)	6 (35)	0.023*
6p13-24 gain	30 (73)	16 (67)	14 (82)	0.309
7q31-34 gain	17 (42)	14 (58)	3 (18)	0.012*
11q22-24 loss	6 (15)	2 (8)	4 (24)	0.212
13q31-34gain	16 (39)	12 (50)	4 (24)	0.113
13q14-22loss	3 (7)	2 (8)	1 (6)	1.000
16q22-24 loss	29 (71)	19 (79)	10 (59)	0.184
17q21-25 gain	25 (61)	13 (54)	12 (71)	0.344
19q12-13 loss	20 (49)	11 (46)	9 (53)	0.756

*: *statistically significant

Supplementary Table 4. 2p gain and 7q gain in different treatment groups

Total N=58		2p gain			7q gain		
Previous chemotherapy		-	+	P value	-	+	P value
IVC	-	7	20	0.001**	12	15	0.002**
	+	22	9		26	5	
IAC	-	12	23	0.007**	18	17	0.010*
	+	17	6		20	3	
Intravitreal chemotherapy	-	21	23	0.760	24	20	0.001**
	+	8	6		14	0	

*P < 0.05, **P < 0.01, ***P < 0.001

Supplementary Table 5. Logistics regression analysis of pathological high-risk factors on recurrent copy number variations

	Total N=41 N (%)	Massive choroid invasion (+) N=12 N (%)	Massive choroid invasion (-) N=29 N (%)	OR (95% CI)	P Value	post-laminar ON invasion (+) N=14 N(%)	post-laminar ON invasion (+) N=27 N(%)	OR (95% CI)	P Value	Choroid and ON invasion (+) N=18 N(%)	Choroid and ON invasion (-) N=23 N(%)	OR (95% CI)	P Value
1q32 gain	35(85)	11(92)	24(83)	/	0.473	12(86)	23(85)	/	0.964	14(78)	21(91)	/	0.239
2p24 gain	24(59)	6(50)	18(62)	/	0.477	9(64)	15(56)	/	0.591	9(50)	15(65)	/	0.732
6p13-24 gain	30(73)	9(75)	21(72)	/	0.865	11(79)	19(70)	/	0.576	11(61)	19(83)	/	0.903
7q31-34 gain	17(41)	3(25)	14(48)	/	0.357	5(36)	12(44)	/	0.591	5(28)	12(52)	/	0.767
11q22-24 loss	6(15)	2(17)	4(14)	/	0.813	3(21)	3(11)	/	0.383	3(17)	3(13)	/	0.745
13q31-34gain	16(39)	2(17)	14(48)	/	0.073	7(50)	9(33)	/	0.303	7(39)	9(39)	/	0.510
13q14-22loss	3(7)	0(0)	3(10)	/	0.999	1(7)	2(7)	/	0.975	1(5)	2(9)	/	0.704
16q22-24 loss	29(71)	11(92)	18(62)	/	0.087	11(79)	18(67)	/	0.430	11(61)	18(78)	/	0.126
17q21-25 gain	25(61)	8(67)	17(57)	/	0.632	9(64)	16(59)	/	0.755	9(50)	16(70)	/	0.510
19q12-13 loss	20(49)	9(75)	11(38)	4.909 (1.088- 22.148)	0.038 *	10(71)	10(4)	4.250 (1.050- 17.202)	0.043*	10(56)	10(43)	/	0.166

*P<0.05