

**Supplementary Table S3.** NACT protocols of 50 patients with completed treatment courses

Nr.	Therapy	Dkk1-IRS reduction (%)
1	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	33
2	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	33
3	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	83
4	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	100
5	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	33
6	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	0
7	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	0
8	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	67
9	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	50
10	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	63
11	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	56
12	3xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 9xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	63
13	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week) +Carboplatin (AUC 1,5-2 i.v./week)	100
14	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week) +Carboplatin (AUC 1,5-2 i.v./week)	63
15	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week) +Carboplatin (AUC 1,5-2 i.v./week)	100
16	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)+(Trastusumab 6mg/kg+420 mg Pertuzumab i.v./3 weeks)	0
17	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 12xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)+ (Trastusumab 6mg/kg+420 mg Pertuzumab i.v./3 weeks)	33
18	7xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)	67
19	18x nab-paclitaxel (80 mg/m <sup>2</sup> i.v./week)	50
20	18x nab-paclitaxel (80 mg/m <sup>2</sup> i.v./week)+Bevacizumab (15 mg/kg i.v./3 weeks)	100
21	6xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)+Bevacizumab (15 mg/kg i.v./3 weeks)	33
22	2xPaclitaxel (80 mg/m <sup>2</sup> i.v./week)+Bevacizumab (15 mg/kg i.v./3 weeks)	33
23	3xETC (Epirubicin 150 mg/m <sup>2</sup> +Paclitaxel 225 mg/m <sup>2</sup> +Cyclophosphamide 2000mg/μ2) i.v./2 weeks	100
24	3xETC (Epirubicin 150 mg/m <sup>2</sup> +Paclitaxel 225 mg/m <sup>2</sup> +Cyclophosphamide 2000mg/μ2) i.v./2 weeks	75
25	3xETC (Epirubicin 150 mg/m <sup>2</sup> +Paclitaxel 225 mg/m <sup>2</sup> +Cyclophosphamide 2000mg/μ2) i.v./2 weeks	63
26	3xETC (Epirubicin 150 mg/m <sup>2</sup> +Paclitaxel 225 mg/m <sup>2</sup> +Cyclophosphamide 2000mg/μ2) i.v./2 weeks	63
27	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	63
28	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	75
29	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	0
30	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	25

Nr.	Therapy	Dkk1-IRS reduction (%)
31	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	100
32	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	75
33	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	33
34	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	0
35	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	78
36	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	0
37	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	25
38	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	75
39	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> ) i.v./3 weeks, followed with 2x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)	0
40	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)+Trastusumab	0
41	4x EC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks), followed with 4x Docetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)+Trastusumab	67
42	9xDocetaxel (75 mg/m <sup>2</sup> i.v./3 weeks)+(Trastusumab 6mg/kg+Pertuzumab 420 mg i.v./3 weeks)	50
43	6xTCH (Docetaxel 75mg/m <sup>2</sup> +Carboplatin AUC 6+Trastuzumab 6 mg/kg+Pertuzumab 420 mg) i.v./3 weeks	50
44	6xTCH (Docetaxel 75mg/m <sup>2</sup> +Carboplatin AUC 6+Trastuzumab 6 mg/kg+Pertuzumab 420 mg) i.v./3 weeks	83
45	6xTAC (Taxotere 75 mg/m <sup>2</sup> +Adriamycin 50 mg/m <sup>2</sup> +Cyclophosphamide 500 mg/m <sup>2</sup> ) i.v./3 weeks	50
46	6xTAC (Taxotere 75 mg/m <sup>2</sup> +Adriamycin 50 mg/m <sup>2</sup> +Cyclophosphamide 500 mg/m <sup>2</sup> ) i.v./3 weeks	100
47	6xTAC (Taxotere 75 mg/m <sup>2</sup> +Adriamycin 50 mg/m <sup>2</sup> +Cyclophosphamide 500 mg/m <sup>2</sup> ) i.v./3 weeks	0
48	6xTAC (Taxotere 75 mg/m <sup>2</sup> +Adriamycin 50 mg/m <sup>2</sup> +Cyclophosphamide 500 mg/m <sup>2</sup> ) i.v./3 weeks	33
49	2xTAC (Taxotere 75 mg/m <sup>2</sup> +Adriamycin 50 mg/m <sup>2</sup> +Cyclophosphamide 500 mg/m <sup>2</sup> ) i.v./3 weeks	56
50	4xEC (Epirubicin 90 mg/m <sup>2</sup> +Cyclophosphamide 600 mg/m <sup>2</sup> i.v./3 weeks)	33

All protocols were applied according to the German guideline on early detection, diagnosis, treatment of breast cancer [4]. i.v.: Intravenous. AUC: Area under the free carboplatin plasma concentration versus time curve.