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	Assay	Use	First Author	Journal	Year	Study Design	Sample Description	Study Population	#samplesparent stud	ly #samplesthis study	SAP Setting	ETx/CT	Endpoint	Main Outcome	Secondary Outcomes	ER Pos	ER Neg	HER2 Neg	Node Pos	Node Neg	Stage	Simon Catego	ry Main Results
	BluePrint	Prognosis	Krijgsman	Cancer Res	2011	Retrospective analysis	Microarray datasets	Kok 2011, Bueno de Mesquita Lancet Onco 2007 (Independent Validation	ol 274, 427	274, 100	no Adjuvar	t ETX, CT	In-Group Proportion for HR+, HER2+, TN	16P for: HR-0.88.0.38 HR2+0.56.0.39 TN=0.68.0.36	Concordance between Blueprint molecular subtype profile and intrinsic subtype by gene expression array was 92%	0.49-0.78	0.22-0.51	0.10-0.35	Not Stated	Not Stated	1, 11	D	In group proportion for BluePrint molecular subgroup profiles ranged from 0.79 to 0.98, where 1.0 is maximum.
E	Ireast Cancer Index	Prognosis	Goetz	Clin Cancer Res	2006	Retro-prospective biomarker analysis	FFPE archived	NCCTG 89-30-52	256	211	yes Adjuvar	t ETx, CT	RFS, DFS, OS over 10 years	8C HFA HI ptr: 8F5-163 (1.05-2.53) 0F5-1.75 (1.16-2.63) 0C5-163 (1.02-2.60)	BCI HR LN-: RF5=1.98 (1.07-3.68) DF5=2.03 (1.15-3.59) O5=2.40 (1.19-4.84)	0.90	0.10	0.18	0.37	0.63	1, 11	в	Development of a dichotomous HOXB13/IL-17BR ratio. A high H/I ratio was associated with shorter RFS, DFS, and OS in ER+LN- patients treated with ET: CTx, but not in LN+ patients.
E	Ireast Cancer Index	prognosis	Jerevall	Br J Cancer	2011	Retro-prospective biomarker analysis	B-FFPE archived	Stockholm (ER+, LN+, post-menopause, no Rx vs.tam)	2798	808	yes Adjuvar	t ETx	DRFS	Cont BCI on untreated pts: HR=7.5 (2.4 – 23.6)	BCI Categories on untreated pts: L v I=2.3 (1.1 -5.0) I v I=2 7 (2 1 -10.8)	1.00	0.00	0.05	0.00	1.00	1, 11	в	Development of BCI using H/I and MGI in Stockholm cohort of ER+ LN- Tam- treated patients. Validation of prognostic utility in ER+ LN- no ETx patients.
E	Ireast Cancer Index	prognosis	Sgroi	Lancet Oncol	2013	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole	1226	665	yes Adjuvar	t ETx	DR at 5 years and 10 years	BCI-C DR over 10 yrs Low=6 %K (95% C1 4 4 - 10 0) Intermediate=17 -3% (12 0 - 24 7)	BCI-LDR over 10 yrs interquartile HR 2.30 [95% CI 1.62–3.27]; LR-άχ ² =22.69; p<0.0001	1.00	0.00	0.10	0.00	1.00	1, 11	в	BCI-L model risk categories were shown to be significantly prognostic for DR both from 0-5 years and 5-10 years. Groups low and int for early recurrence, int and high for late recurrence.
E	Ireast Cancer Index	prognosis	Sgroi	Breat Cancer Resear	cl 2016	Retro-prospective biomarker	FFPE archived	NCIC CTG MA.14	667	292	yes Adjuvar	t ETx	RFS at 10 Yrs	High=22-29 (15-3-31-5) RF5 HR=2.34 (1.33-4.11) p = 0.004	higher continuous linear BCI was associated with shorter RFS (p = 0.002);	0.92	0.08	Not Stated	0.49	0.51	1, 11	в	BCI risk groups were prognostic for RFS for both LN- and LN+ patients.
E	Ireast Cancer Index	prognosis	Zhang	Clin Cancer Res	2013	analysis Retro-prospective biomarker analysis	FFPE archived	Stockholm (ER+, LN-, post-menopause, no Rx vs tam); MGH, U Pitt (registry, ER+, LN-, tam Rx)	2798/358	600/358	yes Adjuvar	t ETx, CT:	DMFS at 5 years and 10 years	BCI, Stockholm TAM DR over 5 yrs Lower 37,216 (956 C, 94,347-493 76) Intermediate 49:248 (1956 C, 36,37-494 76) Heighest 97, (1950 C, 193 507-49-38) Logerank F-Valuer - DOB3 BCI, Multi, Inti, DR over 5 yrs Lower 55 (1956 C, 31,37-48,78) Intermediate 49:23, (1958 C, 34,537-48,48) Heigher 35,76 (1958 C, 34,537-48,48)	treatment by group interaction was not significant Bit3, Stockholm TAM 08:-5 yrs Hit3.50 (1.09-112.3) F=0.035 Bit2, Mit Inter 08: 54 yrs Hit3.34 (1.85:-50.00) F=0.0002	1.00	0.00	Stockholm TAM=0.07 Mult. Inst.=0.12	0.00	1.00	1, 11	В	Development of BC in Stockholm cohort ER-1N- no ETx am; Validation for early and late recurrence in Stockholm ER-1N1 Tam treated patients and in ER-1N-CTx/ETx-treated patients for 6-5 years and -ED years. BC categories shown to be prographic in both time frames.
	Endopredict	prognosis	Dubsky	Ann Oncol	2013	Retro-prospective biomarker analysis	FFPE archived	ABCSG6 (ER+, post- menopausal, treated with tam); ABCSG8 (ER+ ESBC treated with tam)	4707	1702	no Adjuvar	t	DR	000-1004 Low int/Jhigh Risk Group Stratification: German Si W 22.0 (1.164-19) log rank p-0.014 NCCN WR 2.10(0.054-8) log rank p-0.019 St. Gallen W 2.21(1.56-5.14) log rank p-0.019 FK With WS 1.11(0.054-500) log rank p-0.011	EPClin Startification of Int/lgh Risk Group:: German 53 HR 5.60(3.64-8.61) log rank p<0.001 NCCN HR 5.09(3.42-7.58) log rank p<0.001 St. Gallen HR 5.18(38-7.93) log rank p<0.001	1.00	0.00	1.00	0.32	0.68	1, 11	В	EPClin reclassified "60% high risk pts from national guidelines to low risk with 5% 10-year rate of DR. At 10 years EPClin demonstrated greater absolute risk reduction between high and low risk groups than national guidelines.
	Endopredict	prognosis	Filipits	Clin Cancer Res	2011	Retro-prospective biomarker analysis	FFPE archived	ABCSG6 (ER+, post- menopausal, treated with tam); ABCSG8 (ER+ ESBC treated with tam)	(3 (ABCSG-6)/3714 (ABCSG	G 378/1324	yes Adjuvar	t	DR at 10 years	ACC64 444-13 451 08 1 340 pe 000 ACC64 444-13 451 08 1 340 pe 000 Bevariet Cox Model BR Over 13 VT: IPA ACC64 4441-13 131 0-0 331 pe 000 ACC 4450-13 141 0-131 0-131 pe 000 ACL ACC64 4441-131 0-101 0-131 pe 000 ACL ACC64 4441-131 0-101 0-131 pe 000 ACL ACC64 4441-131 0-101 0-131	KM DR Over 10 Yrs: EP. ABCSG-6 HR-3.6(1.8:F-7.16) p-0.001 EP. ABCSG-6 HR-3.6(1.8:F-7.21) p-0.001 EPCIn: ABCSG-6 HR-7.97(3.56-17.28) p-0.001 EPCIn: ABCSG-6 HR-4.27(2.74-6.67) p-0.001	1.00	0.00	1.00	ABCSG-6=0.60 ABCSG-8=0.75	ABCSG-6=0.40 ABCSG-8=0.25		В	EP is a significant predictor of distant recurrence and adds information to clinical factors. EPCIIn low risk and high risk groups have significantly different distant recurrence rates.
	Endopredict	prognosis	Martin	Breast Cancer Res	2014	Retro-prospective biomarker analysis	FFPE archived	GEICAM 9906 (ER+, N+ ESBC, FEC vs FEC-P)	+ 1246	800	yes Adjuvar	t ETx, CT	DMFS at 10 years	Mult Variate Cox Model DR at 10 Yr: EP: H8-1.126(1.041-1.229) p=0.0033	How Mean Data with Bills (Stopping) EP Processional Ref. 64(3):44(3) big parks pr-0.0001 EP Postmenopaual Ref. 64(3):44(1):33:44(3) big rank p-0.0003 EP Cells Premonpaual big rank p-0.0003 EPCIn Postmenopaual big rank p-0.0003 EVCIn Postmenopaual big rank p-0.0003 EVCIn Postmenopaual big rank p-0.0003 EVCIn Postmenopaual big rank p-0.003 EVCIn Postmenopaual big rank p-0.003 EVCIn Postmenopaual big rank p-0.003 EVCIN Big Tank p-0.013 EVCIN Big Tank p-0.023 EVCIN Big Tank p-0.023 EVCIN Big Tank p-0.035 EVCIN Big Tank p-0.035 EVCIN Big Tank p-0.035 EVCIN Big Tank p-0.035 EVCIN Big Tank p-0.043	0.90	0.10	1.00	1.00	0.00		В	EP is an independent prognostic parameter in node positive. EH-yHER-IEC patients treated with adjuvant chemotherary followed by homone therapy EPCIn low risk patients showed an absolute risk reduction of 2B% at 10 years No evidence for chemotherapy predictive properties.
	Endopredict	Prognosis	Buus	J Nati Cancer Inst	2016	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen)	. 1226	928	Yes Adjuvar	t ETx	DRFS at 10 years	EP 0-10 yrs: LBg ² =49.3, p<0.001; 0-5 yrs: LBg2 =25.7, p<0.001; 5-10 yrs: LBg2 =23.6, p<0.001 BS 0-10 yrs: LBg2 =29.1, p<0.001; 0-5 yrs: LBg2 =26.1, p<0.001; 5-10 yrs: LBg2 =26.6, p=0.02 EPClin 0-10 yrs: LBg2 =339.3, p<0.001; 0-5 yrs: LBg2 =80.0, p<0.001; 5-10 yrs: LBg2 =59.3, p<0.001	10 yr DMFS: EP HR-2.98 (95% CI 19.4-5.8, p<0.001) RS HR-2.73 (95% CI 19.1-3.98, p<0.001) EPCIIn HR-5.99 (95% CI 3.4-9.11, p<0.001)	1.00	0.00	1.00	26.70	73.30	1, 11	B	EP and RS provided similar amounts of prognostic information from 0-5 year although EP provided more prognostic information from 0-10 years. Additio of clinical factors in EPClin added significant prognostic information above both EP and RS.
	IHC4	prognosis	Cuzick	J Clin Oncol	2011	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen); Nottingham cohort (ER+, tam vs none)	5880/786	1230/786	yes Adjuvar	t ETx	TTDR at 9 years	TTDR: Chg in Likilkood Ratio: All ptc: ClinHiC4 vc (Lin+23 (27.7-30.3) Node Neg: ClinHiC4 vc Clin+29 (28.5-31.2)	TTR: Chg in Likilhood Ratio: All pts: Clin+IHC4 vs Clin=21.1(19.5-21.6) Node Neg: Clin+IHC4 vs Clin=23.0(22.3-24.8)	1.00	0.00	0.87	0.30	0.70	1, 11	В	TransATAC population sample splitting used to enable development of IHC4 and subsequent validation. Additional validation on Nottingham series. IHC4 prognostic for distant recurrence, similar level to RS.
	IHC4	prognosis	Park	Oncology	2014	Retrospective case series	FFPE archived	Single institutional series (ER+, NO-1)	953	953	yes Adjuvar	t ETx, CT	DRFS	Oig in Likihood Ratio for DRFS: C5H42 + nonnogan score vz. C5H42 (1 d.1) 13.367 2.500-24.230 C5H424 + Ajburd Tollne vz. C5H42 (1 d.1) (2017 - 1.409-1.043 C5H424 + St. Gallen vz. C5H424 (1 d.1) 1.008 - 1.413-5.030	Chg in Liklihood Ratio for RFS: CS-IHC4 + nomogram score vs. CS-IHC4 24.435 13.837–35.03 CS-IHC4 + Adjuvent1 Ohline vs. CS-IHC4 1.232 – 0.502–3.147 CS-IHC4 + St. Gallen vs. CS-IHC4 4.488 0.773–8.202	0.97	0.03	0.14	0.25	0.75	1, 11	c	Development and validation of a nomogram to use with IHC4. IHC4 shown t be similarly prognostic to St. Gallen and Adjuvant!
	IHC4	prognosis	Sgroi	Lancet Oncol	2013	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen)	. 1226	665	yes Adjuvar	t ETx	DR at 5 years and 10 years	NO Pts for <-10 Yrs: (4) (4) (40-24)(4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)	N0 Pts for =<5 Yrs: Ht=3.38 (2.39-4-78) Chg in Likinood Rato= 42.46 (p<0.0001) N0 HE2-cegative for<-5 Yrs: HB= 4.08 (2.26-7.36) Che in Likinood Rato= 22.13 (c<0.0001)	1.00	0.00	0.10	0.00	1.00	1, 11	В	Validation of BCI calculated from H/I and MGI. BCI-L model risk categories were shown to be significantly prognostic for distant recurrence both from years and 5-10 years. Groups low and int for early recurrence, int and high fi late recurrence.
	IHC4	prognosis	Stephen	Br J Cancer	2014	Retro-prospective biomarker analysis	FFPE archived	Edinburgh series (ESBC); Team Trial (ER+, post- menopausal, exemestane vs tam)	1812/4598	1449/3766	yes Adjuvar	t ETx, CT	TTDR	Cox Model of TTDR: Edinburgh 0-5 Yrs: HR=2.09 (1.07-4.05); 5-10 Yrs HR= 1.02 (0.53-1.96) TEAM 0-5 Yrs: HR=1.69 (1.18-2.44); 5-10 Yrs HR=1.21 (0.70-2.07)		1.00	0.00		0.00	1.00	У	в	IHC4 comparison to Mammostrat and clinical features. IHC4 prognostic of distant recurrence up to 5 years, but not beyond.
	Mammaprint	Prognosis e	eno-de-Mesqu	Lancet Oncol	2007	Prospective single-arm observational	Frozen block	Prospectively enrolled	427	427	yes Adjuvar	t ETx, CT	Concordance between signature and guidelines	Clow/Ggood 167 (39%) Clow/Gpoor 76 (18%) Chigh/Ggood 52 (12%) Chigh/Gpoor 132 (13%) Discrafted 12 (21%) CS% C1 (25~2 Janab 298)		0.80	0.20	0.89	0.09	0.91	1, 11	c	Use of signature is feasible in Dutch community hospitals. The signature risk was discordant with guideline assessment in between 27% and 39% of cases
┢	Mammaprint	prognosis	Buyse	J Nati Cancer Inst	2006	Retrospective case series	Frozen block	Multiple institution series: <61 y.o., <5 cm,	1, 326	326	yes Adjuvar	t ETx, CT	DR, OS, and DFS at 10 years	DR HR=2.32 (95% CI = 1.35 to 4.00) for good vs poor signature	OS HR=2.79 (95% CI = 1.60 to 4.87) for good vs poor signature	0.70	0.30	Not Stated	0.00	1.00	1, 11	c	Gene signature risk categories are significantly predictive of DFS and OS in node negative ESBC. Gene signature adds independent prognostic
ŀ	Mammaprint	prognosis	Cardoso	N Engl J Med	2016	Prospective randomized study	FFPE	Operable stage T1-T3	6693	644	yes Adjuvar	t ETx	DRFS at 5 Yrs	DRFS=94.7% (92.5 to 96.2), significantly > prespecified 92% rate	DFS HR=1.5D (95% CI = 1.04 to 2.16) for acod vs poor cHgL CTx vs no CTx DFS HR=0.64 [0.43-0.95] p=0.026	0.98	0.02	0.92	0.52	0.48	1,11	A	Information relative to traditional clinicopathologic factors. Clinical high risk/genomic low risk group RFS was non-inferior to prespecified
ŀ	Mammoniat	prediction	Kna	Frant Canno Pro -	2010	Determent	nublic determine	Multiple institution		541			Dure nere	Univariate BCSS for ETx vs ETx+CTx:	cLEM CLX VS DO CLX UFS HR=0.74 [0.40-1.39] p=0.355 Univariate DDFS for ETx vs ETx+CTx:	0.00	0.10	0.00	0.53	0.40	1.00-		In a cohort of 70-gene high risk patients pooled from previous studies, a
	wammaprint	predictive	KnaUer	e case cancer kes Tre	2010	Retrospective case series	public dataset	series	541	541	Adjuvar	E 1X, CT	DMFS, BCSS	LGW KIXX HHT=0.58(0.07-4.98) p=0.62 High Risk HR=0.21(0.07-0.59) p=0.01 DFC55 for good up =	LOW KISK HK=0.26(0.03-2.02) p=0.20 High Risk HR=0.35(0.17-0.7) p<0.01	0.90	0.10	0.89	0.51	0.49	r-tita	U	signment UMHS and BLSS benefit was observed in patients treated with ETx plus CTx compared to treatment with ETx alone.
┢	Mammaprint	prognosis	Mook	Breast Cancer Res Tre	2009	Retrospective case series	Frozen block	series: <71 y.o., N1-3,	292	241	no Adjuvar	t	UMIPS, BLSS at 10 years	BLSS for good vs poor signature at 10 YTS: HR=7.17(1.81-28.43) log rank p=0.005	HR=2.99(0.996-8.99) log rank p=0.05	0.79	0.21	0.85	1.00	0.00	I-IIIa	D	70 gene signature risk group significantly predict BCSS in LN+ patients.
	Mammaprint	prognosis	Mook	Ann Oncol	2010	Retrospective case series	Frozen block	(NKI): node negative, >54 and <72 y.o., no adjuvant therapy	148	148	no Adjuvar	t	DMFS, BCSS at 10 years	DMFS for good vs poor signature: HR 0-5 Y1=4.6(1.8-12.0) p=0.001 HR 0-12.5 Y1=1.8(0-3.3) p=0.07	BCSS for good vs poor signature: HR 0-5 Yrs=19.1(2.5-148) p=0.005 HR 0-12.5 Yrs=2.0(1.0-40) p=0.04	0.78	0.22	Not Stated	0.00	1.00	1, 11	D	MP risk categories prognostic for BCSS and DMFS through 5 years. Over the entire 10 year period MP was prognostic for BCSS, but not DMFS.
	Mammaprint	prognosis	van de Vijver	N Engl J Med	2002	Retrospective case series	Frozen block	Institutional collection (NKI 295) (<scm, <s3<br="">y.o., some treated with CTx/ETx and some not treated)</scm,>	n 295	295	no Adjuvar	t ETx, CT	DMFS, OS at 10 years	Dit good vs poor signature at 10 YY: HR-5.1(2.9-9.0) p=0.001	05 good vs poor signature at 10 Yrs: HR=8.6(4.0-19.0) p<0.001	0.23	0.77	Not Stated	0.48	0.52	1, 11	D	20 gene signature is a stronger prognostic factor than standard prognostic markers for distant recurrence at 10 years in a heterogeneous cohort of your pts with early stage disease.
	Mammaprint	prognosis	Wittner	Clin Cancer Res	2008	Retrospective case series	Frozen block	Institutional collection (MGH): node negative, age range <40 to >65 (69% >65 ~ c)	n ⁵ , 100	100	yes Adjuvar	t ETx, CT	DR at 10 years	Negative predictive value for DR at 1D Yrs: MGH cohort=100% NKI cohort=38%	Postive Predictive Value for DR at 10 Yrs: MGH Corhort=12% NKI Cohort=52%	MGH Corhort=0.80 NKI Cohort=0.72	MGH Corhort=0.20 NKI Cohort=0.28	Not Stated	MGH Corhort=0.00 NKI Cohort=0.00	MGH Corhort=1.00 NKI Cohort=1.00	1, 11	D	70 gene signature has 100% negative predictive value and 12% positive predictive value in post-menopausal pts. Difference between risk groups for TTDR was not statistically sigificant.
ľ	Oncotype	Prognosis	Sparano	N Engl J Med	2015	Prospective randomized study	FFPE	ER+, LN- and eligible for CTx	10253	1626	yes Adjuvar	t ETx	DFS at 5 years	DFS at 5 Yrs=93.8%(95% CI 92.4-94.9)	DMFS at 5 Yrs=99.3%(95% CI 98.7-99.6); RFS at 5 Yrs=98.7%(95% CI 97.9-99.2) OS at 5 Yrs=98.0%(95% CI 97.1-98.6)	0.99	0.01	0.00	0.00	1.00	1, 11	A	DFS in ER+ ESBC patients with low (<11) RS treated with only ETx is high (949
	Oncotype	Prognosis	Gluz	J Clin Oncol	2016	Prospective randomized study	FFPE	ER+, LN- high risk or LN+, M0	2568	348	yes adjuvan	t ETx	DFS at 3 years	R5-12 DFS at 5 Yrs=97.4%(95% CI 95.6-99.1); R5 12-25 at 5 Yrs=97.8%(95% CI 96.8-98.8) R5 25 at 5 Yrs=91.9% (95% CI 96.9-94.8)	RS <12 pN0-1 no CTx, and RS>11 with CTx: RS<12 DFS at 5 Yrs=98.4%(95% CI 97.0-99.8); RS 12-25 at 5 Yrs=97.5%(95% CI 95.9-99.0)	0.91	0.03	1.00	0.41	0.59	Ļ.Ш	A	DFS in ER+ ESBC patients with high risk features and low (<11) RS treated wit only ETx is high (98%).
				L	1	1	L		1	J	_		1		RS >25 at 5 Yrs=94.9% (95% CI 91.4-98.4)	L				L			

Oncotype	prognosis	Albain	Lancet Oncol 2010	Retro-prospective biomarker analysis	FFPE archived	SWOG-8814 (ER+, LN+, post-menopausal, tam vs CAF-T)	927	367	yes A	Adjuvant	ETx, CTx	DFS/OS at 10 years	DIS 5 atter Period 1496.2 4(1), 233-2,37 pp.00.06 DIS 34 57 HINE-555(2),222,23 pp.00.002 DIS 56 TEX vs Th-CTC K513 log annip - pp.27 HINE-102 K513-93 Dig rank - pp.0.248 HINE-102 R513-93 Dig rank - pp.0.248 HINE-102 R513-93 Dig rank - pp.0.248 HINE-102	OS Entire Period HR=4.42(1-9.97) p=0.0006 OS for ETx vs ETx+CTs: RS<18 log rank p=0.63 RS 18-30 log rank p= 0.85 RS>30 log rank p=0.027	1.00	0.00	0.12	1.00	0.00	II, IIIa	В	Recurrence Score significantly prognostic for DMFS and OS in ER+1M-pts treated with tam. No benefit was observed for CTx in low RS patients, but a significant benefit was observed in patients with high RS (>25).
Oncotype	prognosis	Dowsett	J Clin Oncol 2010	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen)	4160	1231	yes A	Adjuvant	ETx	DR at 9 Years	DR 50 point chg HR=3.92 (95% CI 2.08-7.39) p<0.001 Chg in Likihood Ratio=15.5	DR for 50 pt chg in the LN+ population HR=3.47 (95%Cl 1.64 7.38); P=0.002	1.00	0.00		0.71	0.25	I, II	в	RS significantly prognostic for DRFS in both LN- and LN+ treated with tam or anastrozole. No interaction with treatment group. RS is significantly prognostic beyond Adjuvantl Online.
Oncotype	prognosis	Paik	N Engl J Med 2004	Retro-prospective biomarker analysis	FFPE archived	NSABP B-14 (ER+, LN-, tam treated)	2617	675	yes A	Adjuvant	ETx	DMFS at 10 years	Difference in risk of recurrence between low and high groups at 10 years: (20%-85/14.0-9.6) (10%-84.3)(18): 23.03) high=20.53/12.6-37.4) pc:0.001	Multivariate Cox model for risk of distant recurrence compared to age, tumor size, grade, HER2, ER: RS HR=2.81(.70-4.64) p<0.001	1.00	0.00	0.08	0.00	1.00	I, II	В	Risk of distant recurrence at 10 years significantly different between low and high risk groups. Continuous RS was a significant predictor of both DMFS and OS.
Oncotype	predictive	Paik	J Clin Oncol 2006	Retro-prospective biomarker analysis	FFPE archived	NSABP B-20 (ER+, LN-, CTx vs no CTx)	2299	670	yes A	Adjuvant	ETx, CTx	DMFS, OS at 10 years	Treatment x continuous R5 for DMF5 at 10 Yrs. p=0.038	KM Est of DMFS at 10 Yrs: Low-Tam 965(93.7-99.9); Tam+CTx 95.6(92.7-98.6) Int-Tam 90.9%(82.5-99.4); Tam+CTx 89.1(82.4-95.9) High-Tam 60.5%(46.2-74.8); Tam+CTx 88.1(82.0-94.2)	1.00	0.00	Not Stated	0.00	1.00	1,11	в	Interaction of RS by treatment was significant for ETx compared to ETx plus CTx, with patients with RS >30 deriving benefit from CTx, while patients with low RS tumors <18 derived no benefit.
PAM50	predictive	Cheang	Clin Cancer Res 2012	Retro-prospective biomarker analysis	FFPE archived	NCIC.CTG MA.5 (pre- menopausal, CMF vs CEF)	716	476	yes A	Adjuvant	СТх	RFS, OS	ROR-5 risk categories RFS (C6) at 5 Yrs: low=275 (844) moderate=59% (80%) high=51% (53%) log rafk pc.00001	Multivariate Cox model for RFS [05] for CEF/CMF: HERZ ER=0.56(0.34-0.39] (0.62(0.36-1.05)] Basai HR=1.12(0.60-2.08) [1.32(0.71-2.46)] Lum8 HR=0.76(0.47-1.24) [0.83(0.46-1.50)] Lum8 HR=1.14(0.70-1.88) [1.71(0.91-3.22)]	0.66	0.34	0.20	1.00	0.00	II, IIIa	D	ROR-based intrinsic subtypes were significantly prognostic for RFS and OS.
PAM50	prognosis	Chia	Clin Cancer Res 2012	Retro-prospective biomarker analysis	FFPE archived	MA.12: Stage I-III tumors	672	398	yes A	Adjuvant	ETx, CTx	DFS at 12 years	Multivariate Core model for DFS (OS at 5 Vnc: Baral vs Luma H48:1.25(0.75-3.29) [2.18(0.91-5.26)] H6[22-vs Luma H48:2.25(2.12-9.3.90) [2.74(1.39-5.40)] Lum8 vs Luma H49:2.15(1.2-9.3.9) [2.0(1.25-6.63)] p.0.02	KM of DFS at 12 Yrs for Tam vs Placebo: Tam=86.1% Placebo=74.3% HR=0.52(0.32-0.86) p=0.009	0.75	0.11	0.07	0.75	0.25	I-IIIa	в	Classification into intrinsic subtypes by the PAM50 assay was prognostic for both disease-free survival (DFS; P = 0.0003) and overall survival (DS; P = 0.0002). Test methodology was research PCR versus commercial.
PAM50	prognosis	Dowsett	J Clin Oncol 2013	Retro-prospective biomarker analysis	FFPE archived	TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen)	2006	940	yes A	Adjuvant	ETx	DR at 10 years	Chg in Likihood ratio for DRFS: Al Pis R0R+CTS vr. CTS=213.9 pd.0001 UN=R0R+CTS vr. CTS=24.6 p=0.0001 HER2, LN=R0R+CTS vr. CTS=23.4 p=0.001	Chg in Likihood ratio for DBFS: AI Pte R0P+rC5v or (57-33 a pc0.001 LN+ R0P+rC5v or (57-33 a pc0.001 HER2, N+ R0P+rC5v or (57-23 a pc0.001 Sample splitting: AI Pte R0P+rC5v or (57-23 a pc0.001 LN+ R0P+rC5v or (57-23 a pc0.001 HER2, N+ R0P+rC5v or (57-23 a pc0.001	1.00	0.00	0.64	0.27	0.73	I, II	в	Continuous ROR is prognostic added significant prognostic information beyond clinical factors in all patients. ROR risk groups prognostic for DR out to 10 years.
PAM50	prognosis	Gnant	Ann Oncol 2014	Retro-prospective biomarker analysis	FFPE archived	ABCSG8 (ER+ ESBC treated with tam)	3901	1478	yes A	Adjuvant	ETx	DRFS at 10 years	Chg in likihood ratio for DRF3 at 10 Yrs: All Prex R0R-CLV vs CLV=33.4 0P.00001 LW, HEX. R0R-CLV vs CLV=32.6 0P.00001 LH, HEX. R0R-CLV vs CLV=32.6 0P.0001	All Pts., KM est of survival of DRFS to 10 Yrs: Low=96.7%(94.6-98.0) Int=91.3%(88.1-93.8) High=79.9%(75.7-83.4)	1.00	0.00	0.95	0.39	0.71	1, 11	В	Both continuous ROR score and ROR-based risk groups add prognostic information for 10 year DRFS above standard clinical factors for all subgroups except HER2+.
PAM50	prognosis	Gnant	Ann Oncol 2015	Retro-prospective biomarker analysis	FFPE archived	ABCSG8; TransATAC (ER+, post- menopausal, treated with anastrozole and/or tamoxifen)	9598	2197	yes A	Adjuvant	ETx	DR at 10 years	Cont ROR (hg in likihood rate for DR at 10 Yrs: NR ROR-CTS vs. (TS=17.3 p=0.0001 N2 - ROR-CTS vs. (TS=17.4 p=0.0000 N2 - ROR-CTS vs. (TS=17.4 p=0.0000 N2 - ROR-CTS vs. (TS=17.4 p=0.0001 N1 - 8 ROR-CTS vs. (TS=17.4 p=0.0001	R0R R84. Grgs. CDg. In Millihood ratio for 0.8 at 10 Yrs: N1 R0R-R51 yrs (CT5-111.5 p=0.0015 N2-3 R0R-R15 yr (CT5-11.5 p=0.0014 U-9 R0R-R15 yr (CT5-21.6 5 p=0.0001 N1-3 R0R-R15 yr (CT5-21.6 5 p=0.0001 I5 Riki Grgs (Dp in Milkood ratio for 8 at 10 Yrs: N1 R0R-R15 yr (CT5-22.6 5 p=0.0005 N1 R0R-R15 yr (CT5-22.6 5 p=0.0001 U+ R0R-R15 yr (CT5-22.6 5 p=0.0001 U+ R0R-R15 yr (CT5-24.6 9 =0.0001 H-3 R0R-R15 yr (CT5-24.6 9 =0.0001	1.00	0.00	Not Stated	0.25	0.75	1-18	В	PAM 50 ROR, risk groups, and intrinsic subtypes and prognostic information to clinical information for node positive pts.
PAM50	prognosis	Liu	Breast Cancer Res Trea 2015	Retro-prospective biomarker analysis	FFPE archived	MA.21 Premenopausal, high- risk LN- or LN+ (AC/t	2104	1094	yes A	Adjuvant	СТх	RFS at 12 years	Univariate RFS for categorical ROR: HR=1.27(0.83-1.95) p=0.28 Multivariate RFS for categorical ROR: HR=1.98(0.53-7.45) p=0.311	Multivariate Cox model for IS: LumB vs LumA HR=1.48(0.92-2.37) p=0.106 HER2E vs LumA HR=2.68(1.60-4.48) p=0.001 Particular March MP=1.07(1.0-2.67) are0.003	0.58	0.42	0.12	0.70	0.30	11, 111a	в	Continuous ROR was significantly associated with RFS; categorical ROR was neither predictive nor prognostic for RFS.