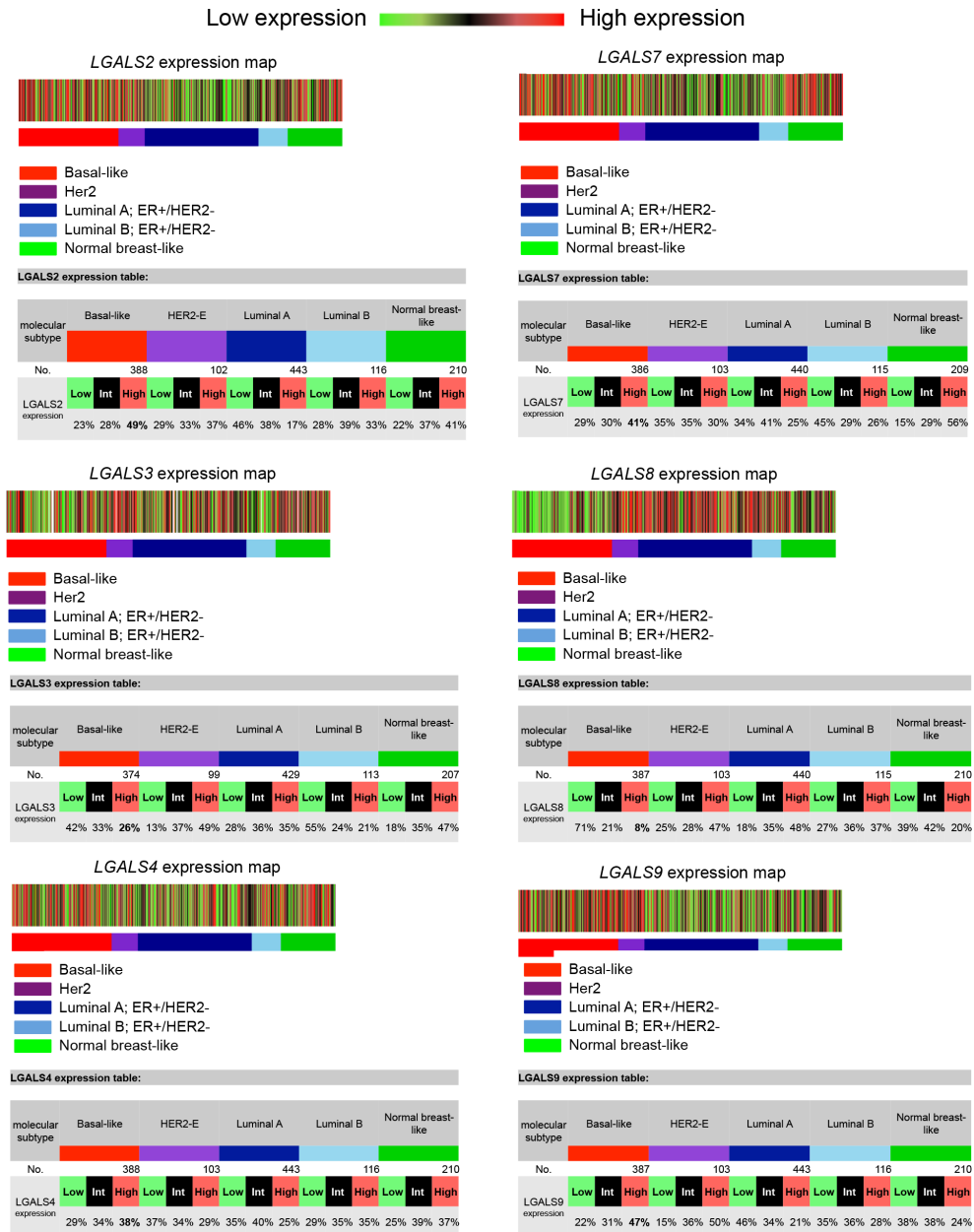
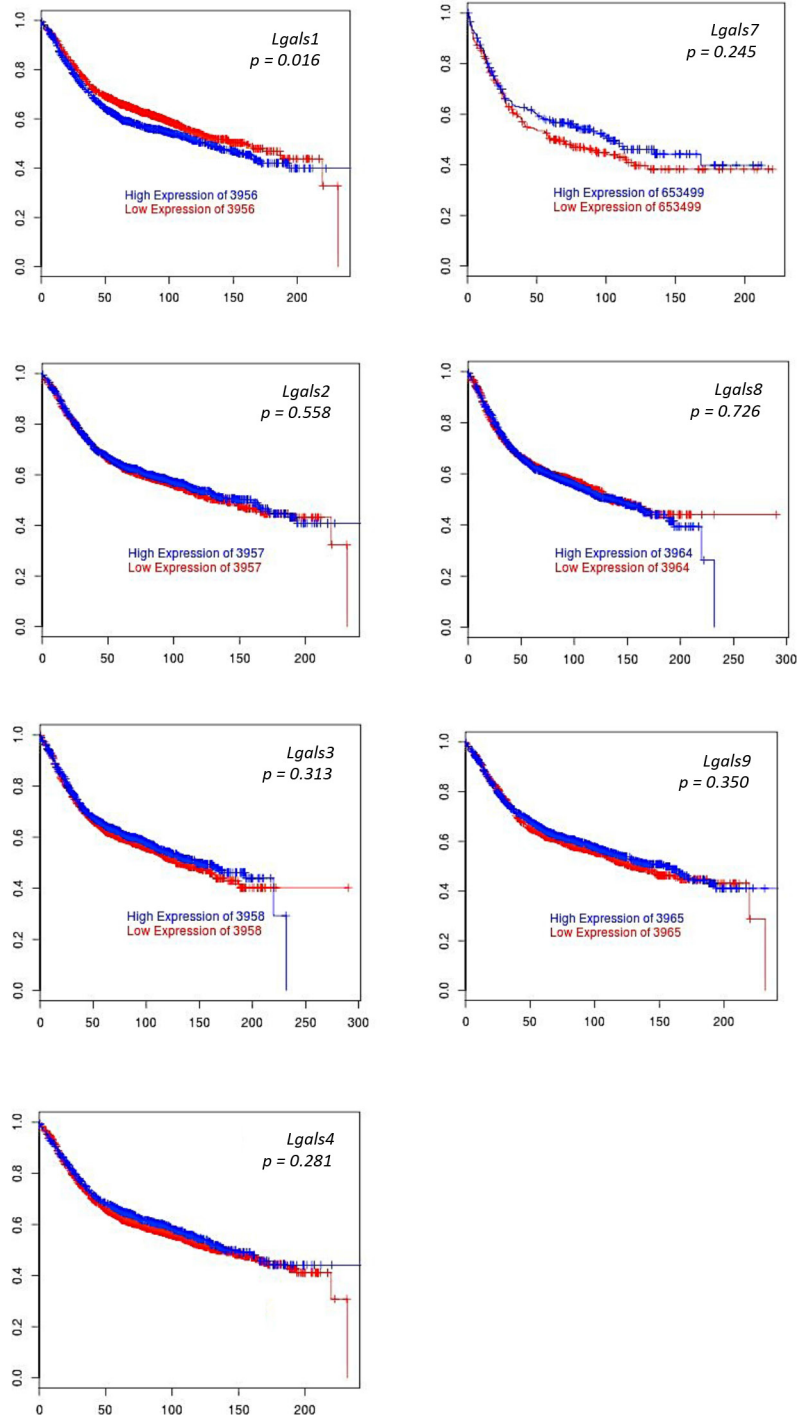


# Galectin signatures contribute to the heterogeneity of breast cancer and provide new prognostic information and therapeutic targets

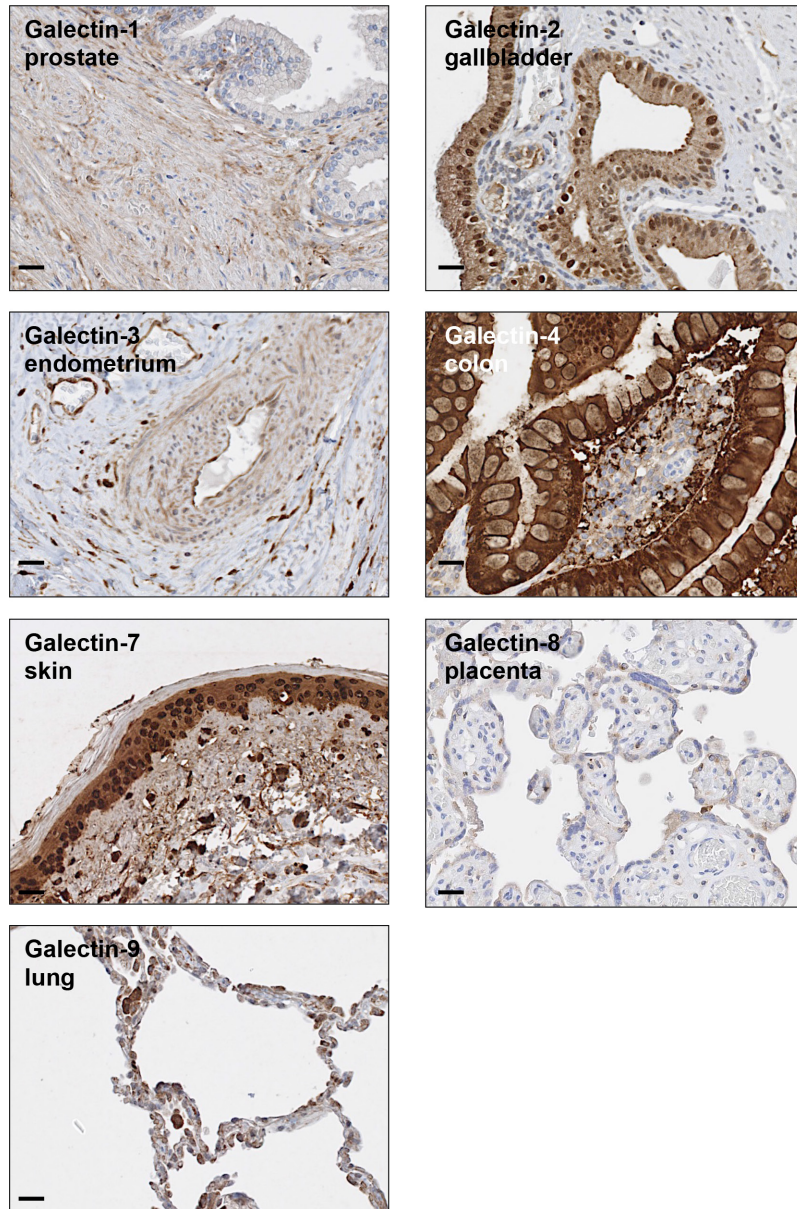
## Supplementary Materials



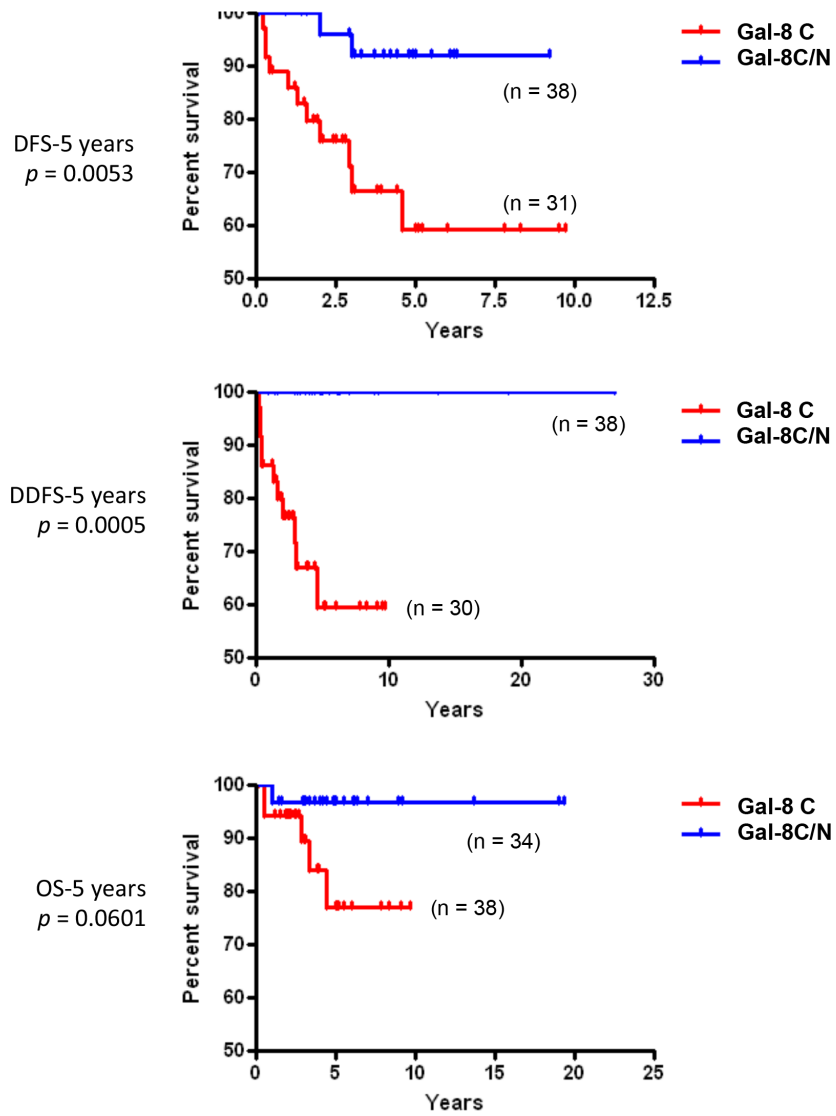
**Supplementary Figure S1: *In silico* analysis of galectins mRNA expression of human breast cancer (bc-GenExMiner).** Each map shows the percentage of patients with low, medium and high expression of *lgals2*, *3*, *4*, *7*, *8* and *9* mRNA in each molecular subtype: Basal-like (ER-, HER-2-), HER-2E (HER-2 enriched), Luminal A (ER+, HER-2-, low proliferation) and Luminal B (ER+, HER-2-, high proliferation).



**Supplementary Figure S2: Effect of *galectin* gene expression on disease-free survival (DFS) of patients with breast cancer, independently of the LN status and across the molecular subtypes.** Kaplan-Meier estimates of overall survival in breast cancer patients expressing low or high *galectin* expression. These figures were generated using BreastMark public database.

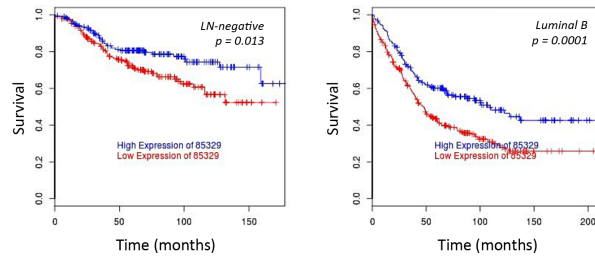


Supplementary Figure S3: Representative IHC staining showing positive controls of galectins expression in normal tissues.

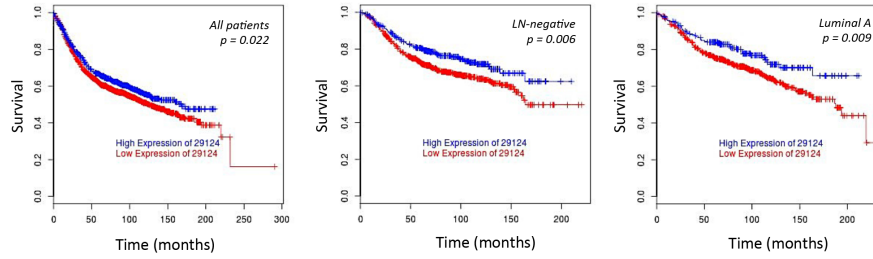


**Supplementary Figure S4: Prognostic potential of galectin in across molecular subtypes of breast cancer.** Kaplan-Meier estimates of 5-year DFS in breast cancer patients with low or high galectin expression independently of the molecular subtype.

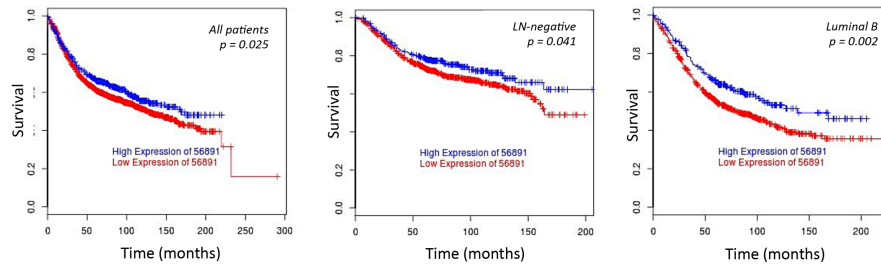
## Lgals12



## Lgals13



## Lgals14



**Supplementary Figure S5: Prognostic potential of *galectin-12*, *-13* and *-14* genes in breast cancer.** Kaplan-Meier estimates of overall survival in breast cancer patients expressing low or high *galectin* expression. These figures were generated using BreastMark public database.

**Supplementary Table S1: Antibodies validation**

	Company	Validation	Reference
Gal-1	Novocastra	Prostate	Ellerhorst <i>et al</i> , 1999
Gal-2	Proteintech Group	Gallbladder	Saal <i>et al</i> , 2005
Gal-3	Abcam	Endometrium	Brustmann <i>et al</i> , 2003
Gal-4	Santa Cruz	Colon	Huflejt <i>et al</i> , 2004
Gal-7	R & D Systems	Skin	Magnaldo <i>et al</i> , 1998
Gal-8	Abcam	Placenta	Kolundzic <i>et al</i> , 2011
Gal-9	Abcam	Lung	Matsumoto <i>et al</i> , 2013

**Supplementary Table S2: Histoclinical correlations of triple negative breast cancers according to galectins expression in cancer cells**

	Gal-1 %(n)		Gal-2 %(n)		Gal-3 %(n)		Gal-4 %(n)		Gal-7 %(n)		Gal-8 %(n)		Gal-9 %(n)	
	Neg/ Low	High	Neg/ Low	High	Neg/ Low	High	Neg/ Low	High	Neg/ Low	High	Neg/ Low	High	Neg/ Low	High
Age, yr	<b>P = 0.013</b>													
≤ 45	7 (5)	15 (11)	4 (3)	19 (14)	3 (2)	19 (14)	<b>16 (12)</b>	<b>7 (5)</b>	18 (13)	6 (4)	4 (3)	18 (13)	13 (9)	11 (8)
> 45	29 (21)	49 (36)	12 (9)	65 (48)	19 (14)	58 (42)	<b>73 (54)</b>	<b>4 (3)</b>	57 (41)	19 (14)	25 (18)	53 (39)	42 (30)	35 (25)
Tumor volume														
≤ 10 cm <sup>3</sup>	18(12)	30(20)	7(5)	38(26)	10 (7)	35 (24)	38 (26)	7 (5)	36 (24)	10 (7)	13 (9)	34 (23)	24 (16)	22 (15)
> 10 cm <sup>3</sup>	18(12)	34(23)	9(6)	46(31)	13 (9)	41 (28)	50 (34)	4 (3)	42 (28)	12 (8)	16 (11)	37 (25)	30 (20)	24 (16)
Lymph node metastasis														
Negative	29 (21)	45 (33)	8 (6)	65 (48)	17 (12)	54 (39)	66 (49)	5 (4)	56 (40)	17 (12)	18 (13)	53 (39)	36 (26)	35 (25)
Positive	7 (5)	19 (14)	8 (6)	19 (14)	6 (4)	24 (17)	23 (17)	5 (4)	19 (14)	8 (6)	11 (8)	18 (13)	18 (13)	11 (8)
Recurrence	<b>P = 0.021</b>				<b>P = 0.019</b>									
No	<b>30 (21)</b>	<b>32 (23)</b>	7 (5)	53 (38)	<b>19 (13)</b>	<b>41 (29)</b>	56 (40)	4 (3)	46 (32)	14 (10)	14 (10)	45 (32)	34 (24)	26 (18)
Yes	<b>7 (5)</b>	<b>31 (22)</b>	8 (6)	32 (23)	<b>3 (2)</b>	<b>37 (26)</b>	35 (25)	6 (4)	30 (21)	10 (7)	16 (11)	25 (18)	19 (13)	21 (15)
Distant metastasis														
No	31 (22)	48 (34)	10 (7)	67 (48)	20 (14)	56 (39)	69 (50)	7 (5)	57 (40)	19 (13)	24 (17)	52 (37)	40 (28)	36 (25)
Yes	6 (4)	16 (11)	6 (4)	18 (13)	1 (1)	23 (16)	21 (15)	3 (2)	19 (13)	6 (4)	6 (4)	18 (13)	13 (9)	11 (8)
Death	<b>P = 0.015</b>													
No	34 (24)	51 (36)	<b>8 (6)</b>	<b>75 (54)</b>	19 (13)	64 (45)	74 (53)	10 (7)	63 (44)	20 (14)	24 (17)	59 (42)	43 (30)	40 (28)
Yes	3 (2)	13 (9)	<b>7 (5)</b>	<b>10 (7)</b>	3 (2)	14 (10)	17 (12)	0 (0)	13 (9)	4 (3)	6 (4)	11 (8)	10 (7)	7 (5)
Ki-67	<b>P = 0.009</b>													
Neg/ Low	8 (6)	21 (15)	5 (4)	23 (17)	6 (4)	24 (17)	24 (18)	4 (3)	21 (15)	8 (6)	<b>15 (11)</b>	<b>14 (10)</b>	21 (15)	8 (6)
High	27 (20)	44 (32)	11 (8)	61 (45)	17 (12)	54 (39)	65 (48)	7 (5)	54 (39)	17 (12)	<b>14 (10)</b>	<b>58 (42)</b>	33 (24)	38 (27)

Fisher's exact test and chi-square test.