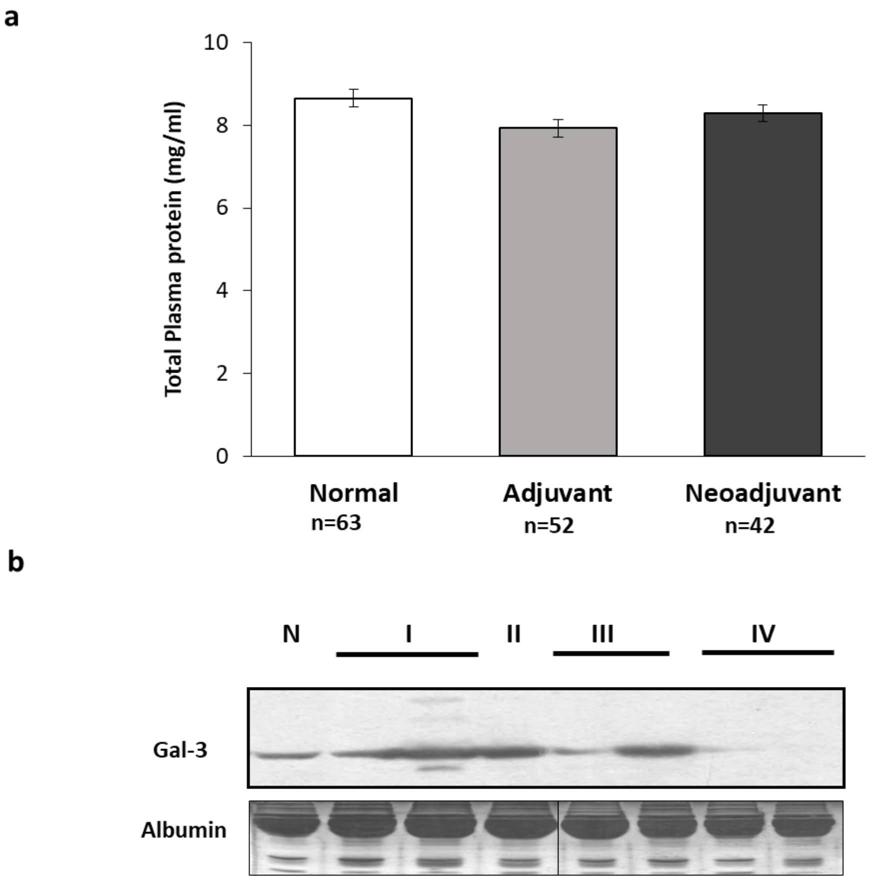
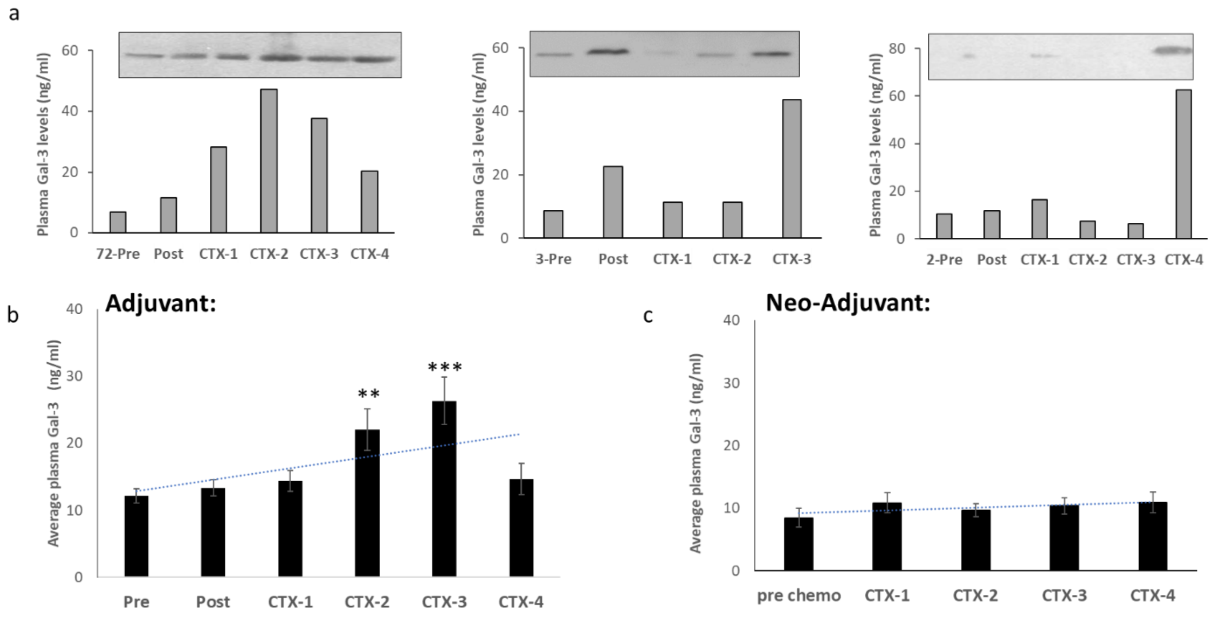
Supplemental Material:

Supplemental Fig. 1:



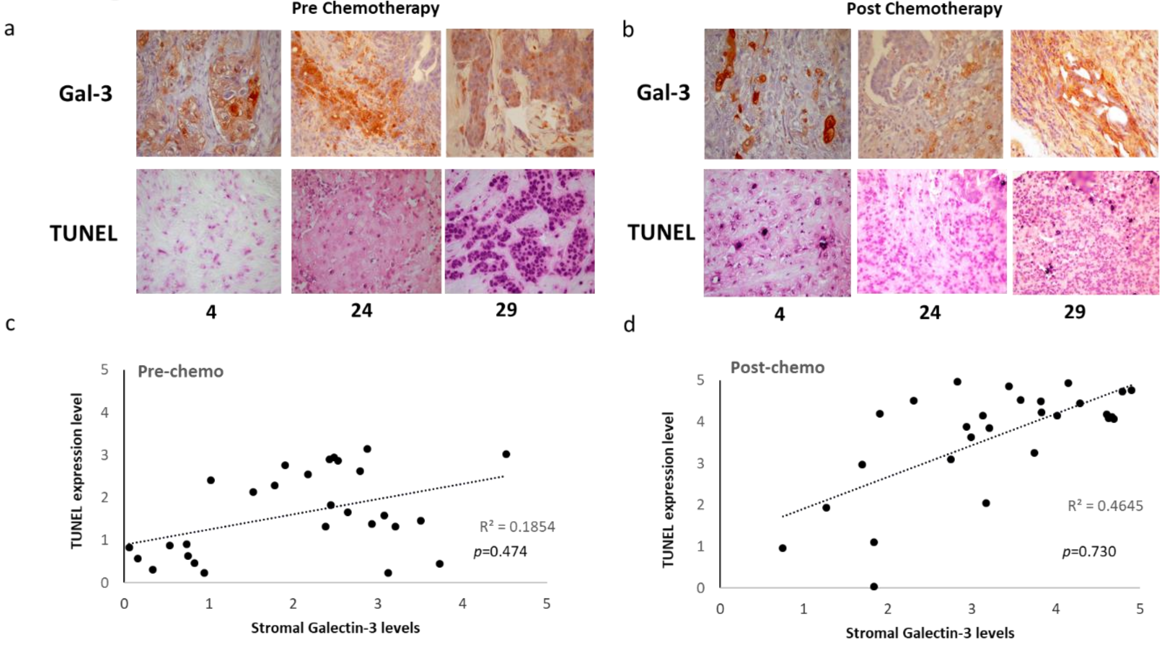
Supplemental Fig. 1: Plasma levels of Galectin-3 decrease with increasing grade of tumor in breast cancer patients. a. Total protein levels in plasma remain unchanged regardless of disease state in cancer patients prior to any treatment. **b.** A representative western blot showing relative Gal-3 expression in plasma from patients with varying grades of breast cancer and non-tumoral control. Albumin band on silver stained gel is used as a loading control.

Supplemental Fig. 2



Supplemental Fig. 2: Plasma Gal-3 levels increase in response to chemotherapy. a. Representative ELISA quantification graphs and matched western blots confirming chemotherapy induced rise in plasma Gal-3 levels. Patient study number is listed at the beginning of each graph. Initial levels at the time of diagnosis (Pre), 2-weeks post surgical removal of tumor (Post) and after each chemotherapy cycle (CTX-1 to CTX-4) are shown. **b** Average plasma Gal-3 levels were calculated at the time of diagnosis (pre), 2 weeks post-surgical tumor removal (Post) and after each chemotherapy cycle (CTX-1-4) in patients receiving adjuvant chemotherapy (n=45). Notice significant increase in Gal-3 levels with each chemotherapy cycle in adjuvant patients (Pre:CTX2 p=0.008812; Pre:CTX3 p=0.000717 compared to initial (Pre) levels).

Supplemental Fig. 3



Supplemental Fig. 3: Chemotherapy induced extracellular Gal-3 correlates with apoptosis in cancer cells. a. TUNEL analysis of pre and post chemotherapy tumor tissue indicate positive relationship between stromal Gal-3 expression and apoptosis. Tissues with higher levels of stromal Gal-3 also show increase TUNEL reactivity. **b.** Correlation graph depicting the relationship between stromal Gal-3 expression and TUNEL reactivity. Pearson coefficient calculation was used to examine correlation. There was a strong positive correlation between stromal Gal-3 and TUNEL expressions post-chemotherapy (p=0.730). These results suggest an anti-tumor effect of soluble Gal-3.

Supplemental Table I: Patient characteristics for breast cancer patients receiving Adjuvant chemotherapy after surgical removal of primary tumor. Patient age, tumor size, type, grade and metastatic status are given. TRN=Triple negative; ER= Estrogen receptor; PR= Progesterone receptor; IDC=Intra-ductal carcinoma; DCIS= Ductal carcinoma in-situ; LCA= Lobular carcinoma; AC-T=Doxorubicin hydrochloride (Adriamycin) & Cyclophosphamide followed by Taxol; FAC/T=Fluorouracil, Doxorubicin, Cyclophosphamide followed by Taxol; CMF=Cyclophosphamide, Methotrexate, Fluorouracil.

ADJUVANT Patient Info

ID	Age	Tumor type	Grade	Ln status	ER	PR	Her2Neu	Chemo type
1	41	IDC	III	+	-	-	2+	AC/ T
2	29	IDC	III	+	-	-	-	AC/T
3	39	IDC	III	-	-	+	-	CMF/T
6	34	IDC	II	+	-	-	3+	AC/ T
7	43	IDC	II	+	+	+	-	CMF/ T
8	53	IDC	II/ III	+	-	-	+	FAC/T
9	64	IDC	II	+	+	+	-	FAC/ T
10	43	IDC	II	-	+	+	2+	CMF/T
46	63	IDC	II	+	+	-	-	FAC/T
47	29	IDC	II	+	-	-	-	AC/T
48	37	IDC	III	+	-	+	-	AC/T
49	43	IDC	II	+	-	-	-	FAC/T
50	59	IDC	III	N/A	+	+	+	AC/T
51	54	IDC	III	+	-	-	-	AC/T
52	32	IDC	II	+	+	+	2+	AC/T
53	36	IDC	II	+	-	-	+	AC/T
54	44	IDC	III	-	+	+	-	FAC
55	44	IDC	II	+	+	+	2+	AC/T
56	28	IDC	III	+	-	-	-	AC/T
57	38	IDC	III	+	-	-	-	FAC
58	59	IDC	III	-	N/A	N/A	N/A	AC/T
59	51	IDC	III	+	+	-	2+	FAC/T
60	54	IDC	III	+	+	-	-	FAC
68	39	IDC	III	+	+	-	3+	AC/T
71	37	IDC	II	+	75% +	90% +		Taxol
72	49	IDC	II	+	+	+	-	AC/T
73	40	IDC	III	+	-	-	-	AC/T
74	44	IDC	III	+	+	-	-	FAC/T
75	42	IDC	II	+	-	+	1+	AC/T
76	39	Sarcoma	III	+	N/A	N/A	N/A	AC/T
77	34	IDC	III	-	-	-	-	AC/T
78	56	ILC	II	-	N/A	N/A	N/A	AC/T
79	54	IDC	III	-	N/A	N/A	N/A	AC/T
80	51	IDC	III	-	N/A	N/A	N/A	AC/T
81	57	IDC	III	-	-	-	-	AC/T
82	46	IDC	II	+	+	+	-	AC/T
83	56	ILC	II	+	N/A	N/A	N/A	AC/T
84	59	IDC	II	-	+	+	-	AC/T

85	64	IDC	II	+	N/A	N/A	N/A	FAC/T
86	59	IDC	III	+	+	-	3+	FAC/T
87	34	IDC	III	-	+	+	2+	AC/T
88	39	IDC	III	-	+	+	-	FAC
89	47	ILC	IV	+	-	30% +	-	AC/T
90	45	IDC	III	+	<10%	<10%	-	AC/T
91	46	IDC	II	N/A	N/A	N/A	N/A	AC.T
101	55	IDC	II	-	-	-	3+	AC/T
102	44	IDC	III	+	<10%	<10%	-	AC/T
103	33	IDC	III	+	-	-	2+	AC/T
104	47	IDC	II	+	20-40% +	10-15% +	-	AC/T
105	65	IDC/ ILC	II	+	80% +	50% +	-	AC/T
106	55	IDC	II	-	10% +	-	2+	FAC/T
107	56	IDC	II	+	10%+	10%+	2+	AC/T

TRN=Triple negative; ER= Estrogen receptor; PR= Progesterone receptor; IDC=Intra-ductal carcinoma; DCIS= Ductal carcinoma in-situ; LCA= Lobular carcinoma; AC-T=Doxorubicin hydrochloride (Adriamycin) & Cyclophosphamide followed by Taxol; FAC/T=Fluorouracil, Doxorubicin, Cyclophosphamide followed by Taxol; CMF=Cyclophosphamide, Methotrexate, Fluorouracil.

Supplemental Table II: Patient characteristics for breast cancer patients receiving Neo-adjuvant chemotherapy followed by surgery. Patient age, tumor size, type, grade and metastatic status are given. TRN=Triple negative; ER= Estrogen receptor; PR= Progesterone receptor; IDC=Intra-ductal carcinoma; DCIS= Ductal carcinoma in-situ; LCA= Lobular carcinoma. AC-T=Doxorubicin hydrochloride (Adriamycin) & Cyclophosphamide followed by Taxol; FAC/T=Fluorouracil, Doxorubicin, Cyclophosphamide followed by Taxol; CMF=Cyclophosphamide, Methotrexate, Fluorouracil.

Neo-adjuvant Patient Info								
ID	**Age**	**Tumor type**	**Grade**	**Ln status**	**ER**	**PR**	**Her2Neu**	**Chemo type**
4	58	IDC	III	-	-	-	-	FAC/T
5	35	IDC	III	-	+	+	-	FAC/T
21	26	IDC	N/A	-	-	-	2+	AC/T
22	48	Metastatic Ca	N/A	+	-	-	-	AC/T
23	49	IDC	III	+	-	-	3+	AC/T
24	41	IDC	III	+	-	-	3+	FAC/T
25	39	IDC	III	+	30%	20%	3+	FAC/T
26	39	ILC	II	+	-	-	3+	FAC/T
27	52	IDC	III	+	-	-	-	AC/T
28	40	IDC	III	+	-	-	-	AC/T
29	48	IDC	II	-	60-70	70-80	-	AC/T
30	39	IDC	III	-	+	+	-	AC/T
67	59	IDC	II	+	80	90	-	AC/T
69	47	IDC	I	-	35-40	-	-	Carboplatin/ T
70	62	IDC	II	+	50 %	10%	-	AC/T
94	44	IDC	II	-	-	-	3+	FAC/T
98	54	ILC	II	+	+	+	-	FAC/ T
99	44	IDC	III	+	-	-	-	AC/T
92	41	LCIS	III	-	+	-	-	AC/T
93	47	IDC/ ILC	II	-	5%	5%	-	AC/T
95	43	IDC/ ILC	II	-	5%	5%	-	AC/T
96	48	IDC	III	+	-	-	-	AC/T
97	52	IDC	III	-	-	-	-	AC/T
100	20	IDC	III	+	-	-	2+	FAC/ T
108	54	IDC	IV	N/A	N/A	N/A	N/A	FAC/ 5FU/ T
109	39	IDC	II	-	60%	30%	N/A	AC/ T
110	42	IDC	III	+	50%	-	-	AC/ T/ Doc
111	55	IDC	III	+	N/A	N/A	N/A	FAC/T
112	50	IDC	III	+	-	-	-	AC/ T
113	39	IDC	II	-	-	-	+	AC/ T
114	30	IDC	III	+	-	-	-	Carboplatin/ AC/T
115	45	IDC	II	N/A	-	-	3+	FAC/T
116	34	IDC	II	N/A	-	-	-	AC/T
117	63	IDC	III	N/A	N/A	N/A	N/A	
118	49	IDC	II	-	-	-	-	AC/ T
119	45	IDC	III	+	-	-	3+	AC/T

TRN=Triple negative; ER= Estrogen receptor; PR= Progesterone receptor; IDC=Intra-ductal carcinoma; DCIS= Ductal carcinoma in-situ; LCA= Lobular carcinoma; AC-T=Doxorubicin hydrochloride (Adriamycin) & Cyclophosphamide followed by Taxol; FAC/T=Fluorouracil, Doxorubicin, Cyclophosphamide followed by Taxol; CMF=Cyclophosphamide, Methotrexate, Fluorouracil.