UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **May 8, 2014**

SYNTA PHARMACEUTICALS CORP.

(Exact name of registrant as specified in its charter)

Delaware	**001-33277**	**04-3508648**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

45 Hartwell Avenue
Lexington, MA 02421
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: **(781) 274-8200**

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

ITEM 8.01 Other Events.

On May 8, 2014, Synta Pharmaceuticals Corp. (the "Company") held its conference call and webcast for the financial results of its first quarter ended March 31, 2014. During the call, the Company included slides on its website relating to the final results from the Phase 2b GALAXY-1 trial, a global, randomized, multi-center study designed to identify the patients with advanced non-small cell lung cancer (NSCLC) with adenocarcinoma histology most likely to benefit from second-line treatment with the Company's lead drug candidate, the Hsp90 inhibitor ganetespib, in combination with docetaxel versus docetaxel alone.

A copy of the slide set is filed as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

ITEM 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number	Description
99.1	Slide set, dated May 8, 2014.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

SYNTA PHARMACEUTICALS CORP.

Dated: May 8, 2014

/s/ Keith S. Ehrlich
Keith S. Ehrlich
Vice President, Finance and Administration
Chief Financial Officer

Exhibit 99.1


Synta Pharmaceuticals
NASDAQ: SNTA
GALAXY-1 Final Results
May 8, 2014

Forward-Looking Statements

This presentation may contain forward-looking statements. These statements reflect our current views with respect to future events and actual results could differ materially from those projected in the forward-looking statements. Factors that could cause actual results to differ are discussed in Synta's 2013 Annual Report on Form 10-K and in our reports on Form 10-Q and Form 8-K. These reports are available on our website at www.syntapharma.com in the "Investors—SEC Filings" section. Synta undertakes no obligation to publicly update forward-looking statements, whether because of new information, future events or otherwise, except as required by law.

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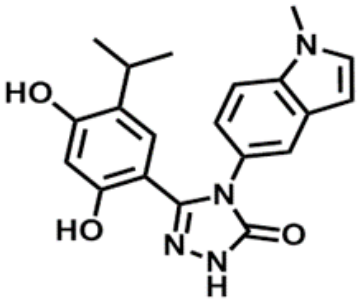
Ganetespib



- Novel, next-generation Hsp90 inhibitor
- Has shown synergistic activity with taxanes, as well as inhibition of angiogenesis and metastasis in preclinical models*
- Demonstrated single-agent clinical activity in a range of solid tumors including NSCLC and MBC
- In over 1000 patients treated to date, ganetespib has been well tolerated both as monotherapy and in combination with docetaxel

*Ganji et al, *Angiogenesis*, July 2013;

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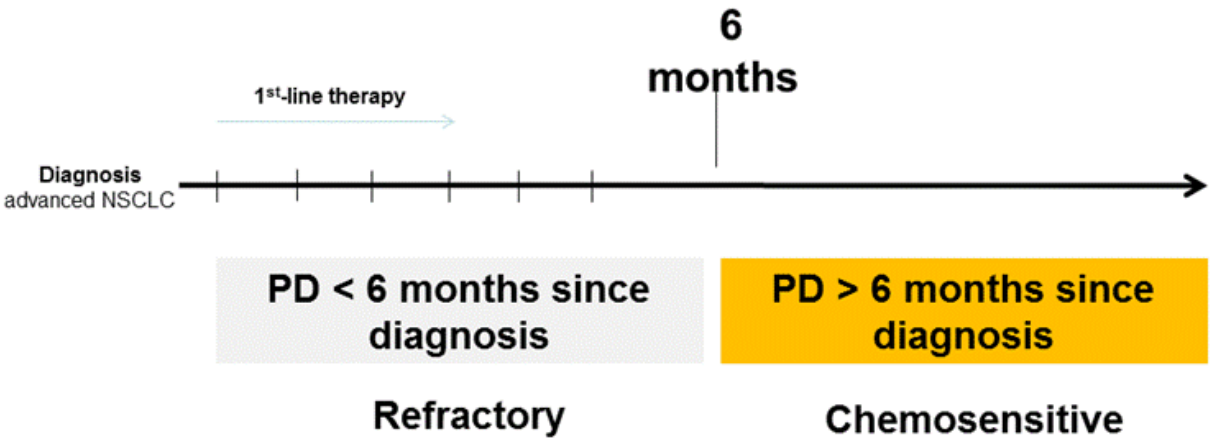
Refractory and Chemosensitive NSCLC



Time since diagnosis > 6 months is a surrogate for **chemosensitivity**

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Rationale for Key GALAXY-1 Patient Populations

Population	Elevated LDH (eLDH)	KRAS mutations (mKRAS)	Diagnosis > 6 months (chemosensitive)
Rationale	• **LDH-A is a marker** of HIF-1α activity • **HIF-1α** is Hsp90 client, drives invasiveness, metastasis	• **RAS** signaling kinases are Hsp90 clients • Medical need	• Key **cell cycle checkpoint/ DNA repair** kinases are Hsp90 clients • Key **mitochondrial apoptosis** pathway proteins are Hsp90 clients

- eLDH and mKRAS: co-primary endpoints
- Chemosensitivity (Diagnosis < or > 6 months): prespecified stratification factor

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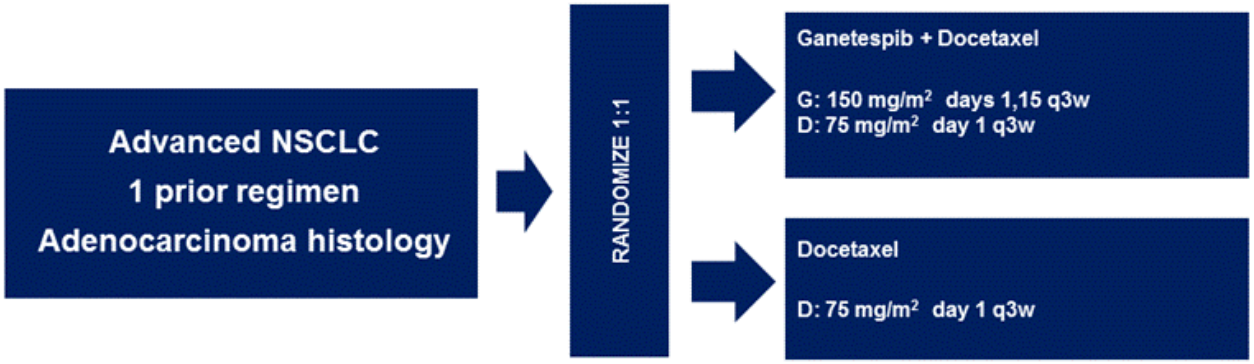
GALAXY-1 Study Design



Stratification Factors

- ECOG PS
- Time since diagnosis of advanced disease
- Baseline serum LDH
- Smoking status

Endpoints

- Co-primary: PFS in eLDH and mKRAS groups
- Key secondary: PFS and OS in adenocarcinoma patients

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Baseline Characteristics: Adenocarcinoma Population

		G + D N=125	D N=128
Median Age (Range)		61 (41, 80)	59 (34, 86)
Male		53%	60%
ECOG Status 0		42%	41%
Never Smoker		26%	24%
Elevated LDH		30%	31%
Stage at Initial Diagnosis	IIIB/IV	86%	88%
Prior Therapy	Platinum-Based	95%	95%
	Pemetrexed	27%	20%
	Bevacizumab	6%	6%
Geographic Region	North America	18%	15%
	Eastern Europe	61%	69%
	Western Europe	21%	16%

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Baseline Characteristics: Chemosensitive population

		G + D N=87	D N=90
Median Age (Range)		61 (42, 79)	59 (42, 86)
Male		52%	61%
ECOG Status 0		41%	38%
Never Smoker		28%	23%
Elevated LDH		22%	31%
Stage at Initial Diagnosis	IIIB/IV	86%	88%
Prior Therapy	Platinum-Based	97%	93%
	Pemetrexed	30%	20%
	Bevacizumab	8%	7%
Geographic Region	North America	20%	17%
	Eastern Europe	57%	65%
	Western Europe	23%	18%

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Median OS and PFS in Key Patient Populations

	G+D vs. D	eLDH N=87	mKRAS N=89	Chemosensitive N=177	Adenocarcinoma N=253
OS	Median (months)	6.0 vs. 5.1	7.6 vs. 6.4	11.0 vs. 7.4	10.2 vs. 8.4
	Events	72 (83%)	68 (76%)	132 (75%)	190 (75%)
PFS	Median (months)	2.8 vs. 2.7	3.9 vs. 3.0	5.3 vs. 3.4	4.5 vs. 3.2
	Events	70 (80%)	73 (82%)	142 (80%)	205 (81%)

Database lock: April 2014

Population selected for Phase 3

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OS and PFS HRs in Key Patient Populations

	Hazard Ratio G+D vs. D	eLDH N=87	mKRAS N=89	Chemosensitive N=177	Adenocarcinoma N=253
OS	Unadjusted	**0.88** p=0.300	**1.18** p=0.755	**0.71** p=0.023	**0.87** p=0.150
	Adjusted	**0.75** p=0.118	**1.23** p=0.204	**0.69** p=0.019	**0.84** p=0.114
PFS	Unadjusted	**1.06** p=0.595	**0.93** p=0.387	**0.75** p=0.040	**0.85** p=0.112
	Adjusted	**0.88** p=0.295	**1.11** p=0.338	**0.74** p=0.042	**0.82** p=0.078

Database lock: April 2014

Population selected for Phase 3

All p-values are 1-sided
Hazard ratios were calculated using Cox proportional hazards model:

- Unadjusted: Univariate analysis
- Adjusted: pre-specified analysis adjusting for multiple prognostic variables such as gender, smoking status, LDH, ECOG performance status, interval since diagnosis of advanced disease, age, total baseline target lesion size, and geographic region.

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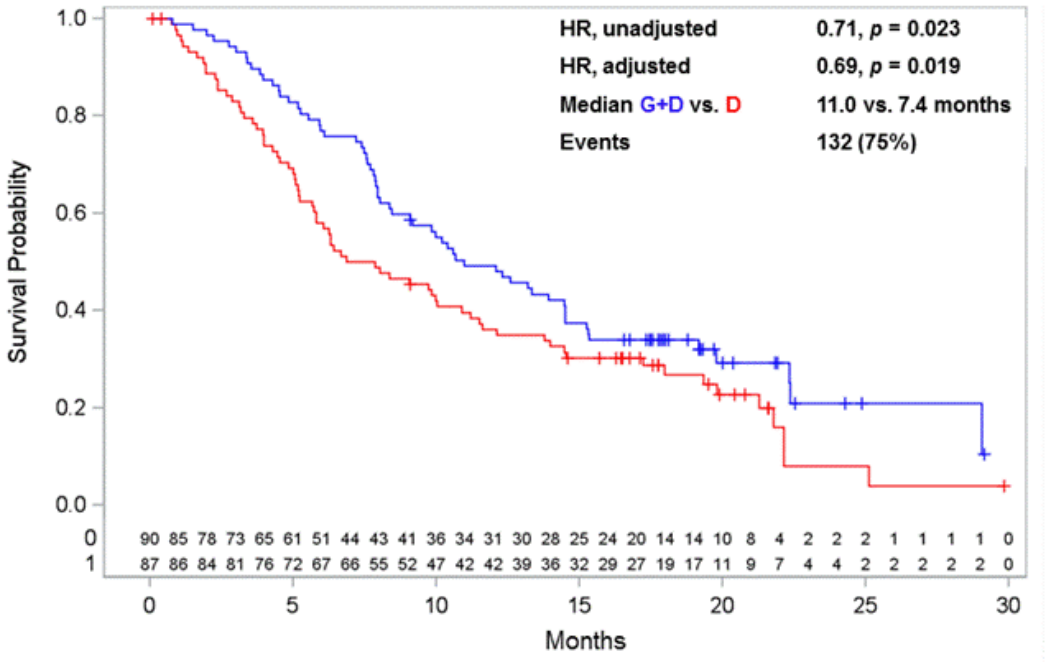
OS: Chemosensitive Population



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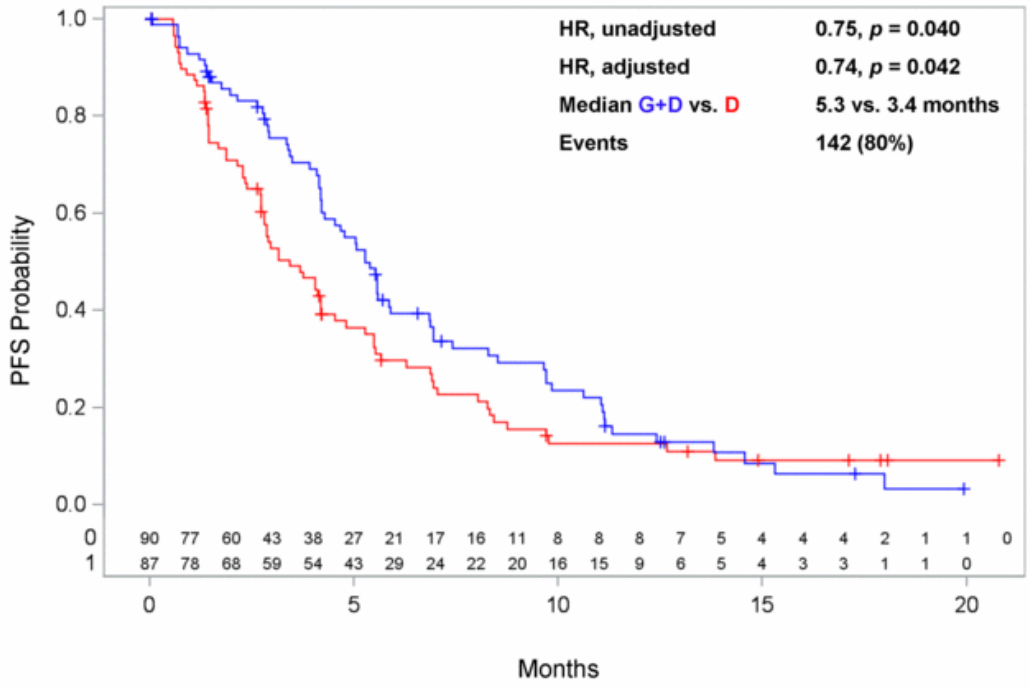
PFS: Chemosensitive Population



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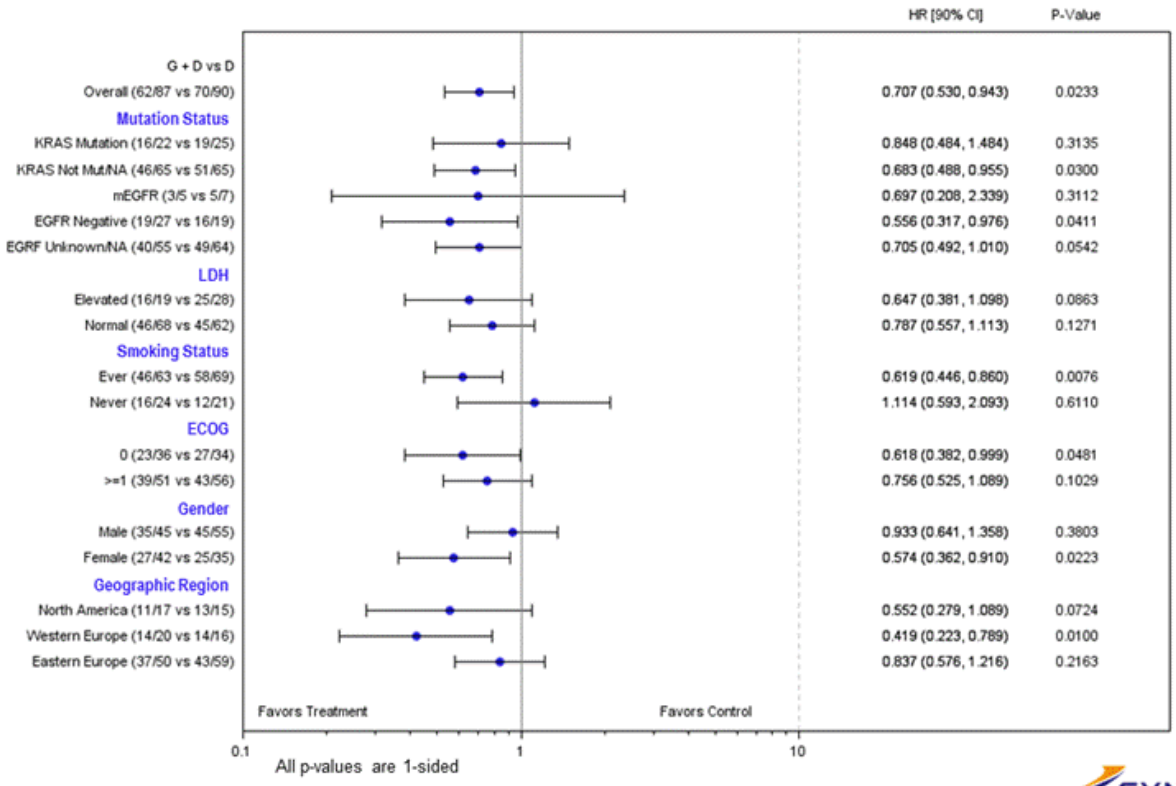
OS Forest Plot: Chemosensitive Population



Adverse Events: Adenocarcinoma Population

	Grade 1		Grade 2		Grade 3 & 4	
	G + D N=123	D N=126	G + D N=123	D N=126	G + D N=123	D N=126
Key AEs > 10%	n (%)					
Diarrhea	37 (30)	18 (14)	19 (15)	3 (2)	5 (4)	0
Fatigue	15 (12)	16 (13)	21 (17)	9 (7)	7 (6)	5 (4)
Nausea	21 (17)	17 (14)	15 (12)	6 (5)	3 (2)	1 (<1)
Alopecia	15 (12)	13 (10)	12 (10)	11 (9)	0	0
Anaemia	4 (3)	3 (2)	16 (13)	12 (10)	10 (8)	2 (2)
Dyspnoea	9 (7)	5 (4)	11 (9)	7 (6)	8 (7)	4 (3)
Neurotoxicity	14 (11)	11 (9)	6 (5)	5 (4)	4 (3)	1 (<1)
Decreased Appetite	13 (11)	11(9)	9 (7)	2 (2)	3 (2)	1 (<1)
Asthenia	11 (9)	4 (3)	7 (6)	5 (4)	6 (5)	4 (3)
Pain	15 (12)	6 (5)	7 (6)	5 (4)	2 (2)	1 (<1)
Cough	8 (7)	11 (9)	6 (5)	7 (6)	2 (2)	0
Tachycardia	16 (13)	13 (10)	2 (2)	1 (<1)	1 (<1)	0
Vomiting	15 (12)	7 (6)	4 (3)	2 (2)	1 (<1)	0
Back Pain	6 (5)	3 (2)	6 (5)	6 (5)	3 (2)	3 (2)
Leukopenia	0	2 (2)	2 (2)	4 (3)	12 (10)	7 (6)
Constipation	12 (10)	7 (6)	2 (2)	4 (3)	0	0
Rash	10 (8)	10 (8)	4 (3)	0	1 (<1)	0
Other AEs of Interest	n (%)					
Mucositis	7 (6)	6 (5)	4 (3)	3 (2)	2 (2)	1 (<1)
Neutropenia	3 (2)	0	4 (3)	4 (3)	50 (41)	53 (42)
Hemoptysis	5 (4)	4 (3)	4 (3)	0	1 (<1)	0
Pulmonary Embolism	NA	NA	NA	NA	4 (3)	2 (2)
Visual Impairment	1 (<1)	0	0	0	0	0
Febrile Neutropenia	NA	NA	NA	NA	11 (9)	6 (5)

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GALAXY-1 Conclusions

- Ganetespib in combination with docetaxel improved OS and PFS compared to docetaxel alone in the chemosensitive population
- No evidence of enhanced activity in mKRAS patients; positive OS trend observed in eLDH patients
- Ganetespib in combination with docetaxel was well tolerated
- Final results from GALAXY-1 validate the choice of chemosensitive population for the Phase 3 GALAXY-2 study

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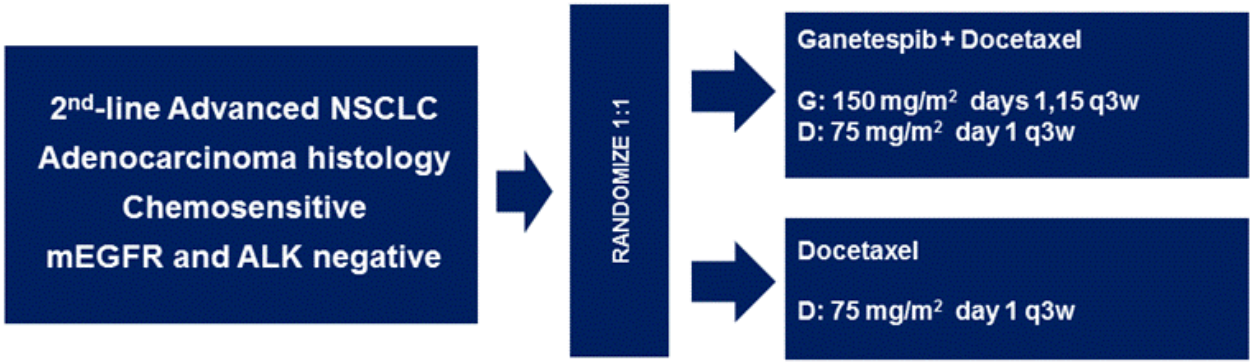
GALAXY-2 Phase 3 Study



Stratification Factors

- ECOG PS
- Baseline serum LDH
- Region

Endpoints

- Primary: OS
- Key secondary: PFS, OS in eLDH

Target enrollment N=850 to ensure minimum of 700 EGFR\ALK negative patients

Active and enrolling

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