

European CAR-T & Cell Therapy Shareholder Peer Ownership Matrix

Cross-analysis of peer holders, current shareholders, and US IPO investors. Excludes passive non-US investors.

Account Name	CYAD HOLDINGS		AGGREGATE PEER HOLDINGS				INDIVIDUAL PEER HOLDINGS									ADDITIONAL INVESTOR DETAILS		
	CO Holdings (\$M)	IPO Allocation (Shares)	# CAR-T Peers Held	# Cell Therapy Peers Held	Total # Peers Held	Total Peer Holdings (\$M)	BLCM Holdings (\$M)	CLLS Holdings (\$M)	JUNO Holdings (\$M)	KITE Holdings (\$M)	NK Holdings (\$M)	ZIOP Holdings (\$M)	ATHX Holdings (\$M)	MSB.ASX Holdings (\$M)	VCEL Holdings (\$M)	Equity AUM (\$M)	City	State
BlackRock Advisors, LLC			6/6	3/3	9/9	46.75	0.73	12.42	0.54	8.03	6.22	0.04	18.76	0.01	261,147.26	New York	NY	
UBS Financial Services, Inc. (Investment Advisor)	5.47		5/6	2/3	7/9	12.73	0.01	3.08	0.54	4.38	4.70	0.01		0.00	133,539.24	New York	NY	
Fidelity Management & Research Company			6/6		6/9	717.74	21.27	126.31	350.71	197.99	21.45				831,390.75	Boston	MA	
Citadel Advisors, LLC			5/6		5/9	33.29	9.56	3.27	19.15	0.16	1.16	0.00			69,162.85	Chicago	IL	
BNY Asset Management			4/6	1/3	5/9	11.59	0.49		2.17	3.75	5.07	0.12			112,449.04	New York	NY	
AllianceBernstein, L.P. (U.S.)			4/6	1/3	5/9	7.19	0.29		1.46	3.03	2.34		0.07		142,155.60	New York	NY	
Tocqueville Asset Management, L.P.			5/6		5/9	7.03	1.00	0.56	3.53	1.32	0.62				8,655.99	New York	NY	
Deutsche Investment Management Americas, Inc.			4/6	1/3	5/9	0.96		0.47	0.02	0.01	0.37		0.10		29,009.41	New York	NY	
Ladenburg Thalmann Asset Management, Inc.			3/6	2/3	5/9	0.32			0.08		0.07	0.16		0.00	5,395.25	New York	NY	
Baker Brothers Investments			4/6		4/9	97.48	89.13	1.80	4.27		2.27				12,219.20	New York	NY	
Franklin Advisers, Inc.			4/6		4/9	51.77	18.09	8.84		24.85					126,228.18	San Mateo	CA	
T. Rowe Price Associates, Inc.			4/6		4/9	45.47	30.89	0.00	5.23	8.37	0.98				517,043.03	Baltimore	MD	
Millennium Management, LLC	4.26	150,000	4/6		4/9	16.89	11.20	3.18	1.33	1.18		0.00			48,268.86	New York	NY	
Manulife Asset Management (U.S.), LLC			4/6		4/9	15.51	0.07		14.30	0.64	0.50				63,258.28	Boston	MA	
U.S. Trust, Bank of America Private Wealth Management			2/6	2/3	4/9	3.19			1.17		1.88	0.14		0.00	98,154.54	New York	NY	
Deutsche Bank Trust Company Americas			4/6		4/9	2.61	0.76		1.28	0.13	0.44				67,631.38	New York	NY	
Sunamerica Asset Management, LLC			4/6		4/9	1.95	0.10		0.01	1.03	0.81				22,485.41	Jersey City	NJ	
Voya Investment Management Company, LLC			3/6	1/3	4/9	1.93			0.29	0.89	0.68		0.07		47,463.68	New York	NY	
The PNC Financial Services Group, Inc.			3/6	1/3	4/9	1.60			0.24	0.01	1.35	0.00			59,649.14	Pittsburgh	PA	
Wells Fargo Bank N.A. (Asset Management)			4/6		4/9	1.15	0.10		0.10	0.58	0.37				61,893.08	San Francisco	CA	
U.S. Bank Private Asset Management			4/6		4/9	0.82	0.06		0.59	0.03	0.13				25,822.79	Minneapolis	MN	
Glenmede Trust Company (Asset Management)			2/6	2/3	4/9	0.03			0.01	0.00		0.02		0.00	7,500.10	Philadelphia	PA	
Capital Research Global Investors (U.S.)			2/6	1/3	3/9	393.24				334.40				58.84	399,823.31	Los Angeles	CA	
J.P. Morgan Investment Management, Inc.			3/6		3/9	77.87	10.50		1.78	65.60					255,146.39	New York	NY	
The Invsu Group, LLC			3/6		3/9	40.55		4.51	10.13	25.91					3,332.35	New York	NY	
Perceptive Advisors, LLC	3.90	75,000	2/6	1/3	3/9	20.19	11.75	6.55						1.89	1,498.54	New York	NY	
Emerald Advisers, Inc.			3/6		3/9	18.86	7.32				0.86	10.67			3,406.44	Lancaster	PA	
venBio Select Advisor, LLC			2/6	1/3	3/9	10.53	5.58	1.08						3.87	357.30	San Francisco	CA	
Columbia Management Investment Advisers, LLC			3/6		3/9	10.44			5.78	3.01	1.64				163,353.14	Boston	MA	
Sabby Management, LLC			3/6		3/9	5.96	5.13	0.00	0.60	0.22					435.24	Upper Saddle River	NJ	
Putnam Investment Management, LLC			3/6		3/9	4.82	0.54	1.44		2.84					54,921.88	Boston	MA	
Tekla Capital Management, LLC			3/6		3/9	3.10	1.28	1.44		0.38					2,787.55	Boston	MA	
Principal Global Investors, LLC			3/6		3/9	2.06	1.59			0.27	0.21				72,814.54	Des Moines	IA	
Colorado Public Employee Retirement Association			3/6		3/9	0.58			0.02	0.37	0.18				12,930.66	Denver	CO	
Teacher Retirement System of Texas			3/6		3/9	0.12	0.01			0.07	0.05				14,534.11	Austin	TX	
Wunderlich Capital Management, LLC			3/6		3/9	0.11	0.01		0.00	0.01	0.09				229.56	Memphis	TN	
Iwamoto, Kong & Company Inc.			3/6		3/9	0.10			0.01	0.06	0.03				291.07	Irvine	CA	
DoubleLine Capital, L.P.			3/6		3/9	0.07	0.02		0.02	0.03					51.03	Los Angeles	CA	
Capital World Investors (U.S.)			2/6		2/9	282.08				201.72	80.36				543,062.37	Los Angeles	CA	
Frontier Capital Management Co., LLC			2/6		2/9	60.70				60.70					13,913.67	Boston	MA	
RA Capital Management, LLC			2/6		2/9	36.76	21.83		14.93						972.60	Boston	MA	
RS Investment Management Company, LLC	12.40		2/6		2/9	29.35			2.07	27.28					11,889.44	San Francisco	CA	
Partner Fund Management, L.P. (U.S.)			2/6		2/9	26.07			6.89	19.18					4,014.97	San Francisco	CA	
First Republic Investment Management, Inc.			2/6		2/9	23.16			0.47	22.69					8,714.67	New York	NY	
Arrowpoint Asset Management, LLC			2/6		2/9	18.62		0.74	17.88						4,097.18	Denver	CO	
Rock Springs Capital Management, L.P.			2/6		2/9	17.70		0.00	10.51	7.19					1,357.21	Baltimore	MD	
Point72 Asset Management, L.P.			2/6		2/9	11.22	10.75	0.00			0.48				12,943.69	Stamford	CT	
UBS Global Asset Management (Americas), Inc.			2/6		2/9	9.06	0.00		3.44	5.62					37,978.76	Chicago	IL	
Sphera Funds Management, LTD			2/6		2/9	8.40	4.92	0.00	0.00	3.47					693.20	New York	NY	
Lamond Capital Partners, LLC			2/6		2/9	7.90	1.46			6.43					98.50	San Francisco	CA	
J.P. Morgan Private Bank			2/6		2/9	7.62	0.62			7.00					86,747.25	New York	NY	
Lazard Asset Management, LLC (U.S.)			2/6		2/9	7.11		7.11							76,434.44	New York	NY	
Visium Asset Management, L.P.			1/6	1/3	2/9	6.65			0.71					5.94	7,002.58	New York	NY	
Jennison Associates, LLC			2/6		2/9	5.86	5.86								111,710.23	New York	NY	
Fred Alger Management, Inc.			1/6	1/3	2/9	5.40			4.70	0.00				0.70	22,471.23	New York	NY	
Cormorant Asset Management, LLC	3.90	75,000	2/6		2/9	4.60	0.00	0.41		4.19					727.66	Boston	MA	
Landscape Capital Management, LLC			2/6		2/9	3.44		2.66			0.78				588.09	Englewood	NJ	
Auriga Capital Management, LLC		15,000	2/6		2/9	2.06	0.84		1.22						22.93	New York	NY	
Mariner Investment Group, LLC			2/6		2/9	2.04			1.28	0.76					379.96	Harrison	NY	
Hamilton Lane Advisors, Inc.			2/6		2/9	2.04			0.67	1.37					264.86	Bala Cynwyd	PA	
Federated Investment Management Company			2/6		2/9	1.75			0.53	1.22					19,183.12	Pittsburgh	PA	
D.E. Shaw & Company, L.P.		10,000	2/6		2/9	1.60			0.00	1.08		0.52			52,165.71	New York	NY	
Opus Point Partners Management, LLC			1/6	1/3	2/9	1.56			0.27					1.29	193.99	New York	NY	
State Teachers Retirement System of Ohio			2/6		2/9	1.27	0.00			1.09		0.19			29,823.55	Columbus	OH	
BMO Asset Management U.S.			2/6		2/9	1.24				1.24		0.00			23,137.92	Chicago	IL	
Alpine Woods Capital Investors, LLC			2/6		2/9	1.14			0.53	0.61					3,027.62	Purchase	NY	
Renaissance Capital, LLC			2/6		2/9	1.00			0.47	0.52		0.00			32.40	Greenwich	CT	
Wall Street Associates, LLC			2/6		2/9	0.99		0.72	0.27						1,059.66	La Jolla	CA	
FIC Capital, Inc.			2/6		2/9	0.96			0.44	0.52					247.84	New York	NY	
Pyramis Global Advisors, LLC			2/6		2/9	0.91				0.28		0.63			23,388.32	Smithfield	RI	
Mutual of America Capital Management			2/6		2/9	0.78			0.01	0.77					4,529.02	New York	NY	

Celyad Shareholder Peer Ownership Matrix

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Laurion Capital Management, L.P.			2 / 6		2 / 9	0.78			0.00	0.38		0.41				2,116.77	New York	NY
Tudor Investment Corporation			2 / 6		2 / 9	0.60			0.34	0.00		0.27				2,537.50	Greenwich	CT
Gilder Gagnon Howe & Company, LLC			2 / 6		2 / 9	0.57			0.15	0.00		0.42				7,604.35	New York	NY
HighTower Advisors, LLC			1 / 6	1 / 3	2 / 9	0.48						0.43		0.06		6,237.81	Chicago	IL
Wilmington Trust Investment Management, LLC			2 / 6		2 / 9	0.35				0.33		0.02				12,704.11	Wilmington	DE
EntrepreneurShares, LLC			2 / 6		2 / 9	0.33				0.31		0.02				144.13	Boston	MA
Ohio Public Employees Retirement System			1 / 6	1 / 3	2 / 9	0.30			0.19				0.11			21,084.23	Columbus	OH
Capital Impact Advisors, LLC			2 / 6		2 / 9	0.29				0.28		0.01				196.92	Boston	MA
Springbok Capital Management, LLC			2 / 6		2 / 9	0.11		0.08	0.03							575.84	New York	NY
First New York Securities, LLC			2 / 6		2 / 9	0.06		0.02	0.04			0.00				151.08	New York	NY
Thompson Davis & Company, Inc.			2 / 6		2 / 9	0.04			0.03			0.00				86.59	Richmond	VA
PNC Capital Advisors, LLC			2 / 6		2 / 9	0.02				0.01		0.01				8,220.54	Baltimore	MD
WFG Advisors, L.P.			1 / 6	1 / 3	2 / 9	0.01						0.01		0.00		362.57	Dallas	TX
JNBA Financial Advisors			2 / 6		2 / 9	0.01				0.01		0.01				263.80	Minneapolis	MN
CT Financial Advisors, LLC			2 / 6		2 / 9	0.01	0.01					0.00				159.40	Chadds Ford	PA
Guggenheim Partners Investment Management, LLC			2 / 6		2 / 9	0.00						0.00				9,406.76	Santa Monica	CA

CAR-T Peers: Bellicum Pharmaceuticals, Inc. (BLCM), Cellectis SA ADS (CLLS), Juno Therapeutics, Inc. (JUNO), Kite Pharma, Inc. (KITE), NantKwest, Inc. (NK), ZIOPHARM Oncology Inc. (ZIOP)
 Cell Therapy Peers: Athersys, Inc. (ATHX), Mesoblast, LTD (MSB.ASX), Vericel Corporation (VCEL)

Source: Ipreo, Q2 2015 13 F Filings
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