

Table 2b - Distinctive Features of Early Biotech Firms

	(A) SCIENCE	(B) FINANCE	(C) COMMERCE	What Happened?
Centocor (1979)	<ul style="list-style-type: none"> Pursued aggressive in-licensing of research from public science Initially located in a business incubator on the University of Pennsylvania campus Enjoyed a close relationship with research institute (Wistar) 	- / -	<ul style="list-style-type: none"> Served as a bridge between academic labs and Big Pharma manufacturing/marketing Recruited a senior exec from Corning's medical products business to run the company Focused on diagnostic products 	"Academic scavengers" almost lose their company due to grand inspirations to become a fully integrated pharmaceutical company. Acquired by Johnson & Johnson in 1999
Amgen (1980)	<ul style="list-style-type: none"> Assembled an all-star science advisory board (SAB) 	<ul style="list-style-type: none"> Went public in a last-ditch effort to save the company, despite no products or patented breakthroughs 	<ul style="list-style-type: none"> Served as a bridge between academic labs and Big Pharma manufacturing/marketing Recruited a senior exec from Corning's medical products business to run the company Focused on diagnostic products 	Savvy VCs set out to "do biotech right" by recruiting stellar SAB and putting talented pharma escapee in charge; a biopharma titan is born
Chiron (1981)	<ul style="list-style-type: none"> Founder stayed at university initially Applied the skills of academic administration to business Insisted that scientists publish and make contributions to public science Transferred a founder's existing research grant from the university (UCSF) to the company Used research partnerships with pharma companies and universities as a mode of exploration 	- / -	<ul style="list-style-type: none"> Focused on large potential market underserved by Big Pharma: vaccines Scientific founder ran the company 	Scientist-entrepreneurs move the invisible college model to a business setting. Acquired by Novartis in 2006
Genzyme (1981)	<ul style="list-style-type: none"> Transferred a founder's existing research grant from the university (Tufts) to the company Talented research assistant played a key founding role Hired its science advisory board intact (Bio-Information Associates, a consulting firm of MIT and Harvard professors) 	<ul style="list-style-type: none"> Used tracking stocks to compartmentalize risk Grew through numerous small acquisitions 	<ul style="list-style-type: none"> Founder was a serial entrepreneur from the packaging industry Focused on niche markets and orphan drugs Recruited a senior exec from Baxter to run the company 	VC group goes shopping for a new venture; builds business around orphan drug opportunities. Acquired by Sanofi-Aventis in 2011
Immunex (1981)	<ul style="list-style-type: none"> Insisted that scientists publish and make contributions to public science Founding scientists resigned from academic jobs to avoid conflict of interest Chose a campus-like setting near a major university (University of Washington) and research institute (Hutchinson Cancer Center) 	<ul style="list-style-type: none"> Out-licensed early patents to Big Pharma, then later reacquired them 	<ul style="list-style-type: none"> One of the founders was a proven executive and turn-around artist 	Despite stellar scientific record, business success comes late. Acquired by Amgen in 2002, resulting in the loss of local "Immunoid" culture.