Table 3 Licensing deals by therapeutic area

Therapeutic area	Number of products partnered for development	Number of companies that out-licensed products
Oncology	308	164
Neurology	241	140
Infectious diseases	173	94
Endocrine and metabolic diseases	130	83
Cardiovascular diseases	72	53
Dermatology	32	29
Genitourinary diseases	26	26

Source: BCIQ: BioCentury Online Intelligence.

Table 4 Acquisitions completed between 2005 and mid-2012 that were not in line with the partnering interest announced by the buyer company

Buyer	Therapeutic area	Target company	Total deal value ($M)
Bayer	Platforms	Direvo	300
Biogen Idec	Oncology	Conforma	250
	Respiratory diseases/injury	Stromedix	562
Bristol-Myers Squibb	Respiratory diseases/injury	Amira	475
Johnson & Johnson	Drug formulation platform	TransForm Pharmaceuticals	230

Source: HBM Partners M&A Report.

an earn out. When we sorted the number of all-upfront and structured deals by the year when the deal took place, it became obvious that the number of structured deals as compared to all-upfront deals has been growing over the last years, which is not news[4]. Thus, the number of structured deals is rather dependent on the time when the deals were closed rather than development stage. These numbers support the more risk-sharing approach that pharma is currently taking to prevent write-offs in case a technology or compound does not prove its value in advanced development. However, it is remarkable that the upfront paid was half of the total deal value for all phases of development and not significantly lower in the preclinical stage deals.

As big pharma is taking fewer risks these days, entrepreneurs and investors need to be prepared for structured deals in which only part of the total value is paid up front. However, promising biotech assets and companies are still attractive to big pharma—this is evidenced by the continuous M&A activity, significant deal values and big pharma's proactive approach toward biotech companies. Investing or founding companies that develop products in one of the most popular areas for partnering (**Table 2**)—neurology, chronic inflammation, oncology, endocrine and metabolic diseases, cardiovascular disorders and infectious diseases—increases the chance of the company benefitting from meaningful partnerships with a pharmaceutical company, and it also should better the odds of finding an exit with big pharma. Pharmaceutical companies appear to be accessing their most highly desired areas fairly evenly through acquisitions and licensing deals—and both will help your company. But because we are VC investors, we prefer to sell companies rather than out-license their products, and we believe the most attractive companies for acquisition are those developing products in chronic inflammation, oncology, cardiovascular disorders and infectious diseases.

Moreover, our analysis showed that acquisitions by large pharmaceutical companies were generally in line with their official declared partnering interests, and when this was not the case, the deal value was lower than the average. This suggests that biotech entrepreneurs should not spend much effort in attempting to approach big pharma buyers with assets that are outside their indicated partnering interests. If they do, they will find lower valuations on the table.

COMPETING FINANCIAL INTERESTS
The authors declare competing financial interests: details are available at http://www.nature.com/doifinder/10.1038/nbt.2533.

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SciCafé nature publishing group npg

Startups on the menu

Boston University's (BU) Jim Collins presented work from his lab on a network biology approach to antibiotic discovery at the Boston SciCafé, *Nature Biotechnology*'s and *Nature Medicine*'s tri-annual gathering of academic researchers and business people. He's now a cofounder of EnBiotix, a startup focused around this technology, to develop new classes of antibiotics and antibiotic potentiators to tackle multidrug-resistant microbes. *Nature Biotechnology* talked to him about the company.

Nature Biotechnology: Describe the process for how EnBiotix came together.

Jim Collins: Jeff Wager and I met in the fall of 2011, via BU's Office of Technology Development. Jeff was looking for new commercialization opportunities in biotech, and I was looking to partner with a serial entrepreneur to commercialize our antibiotics platforms. We met extensively over several months, and by the time we headed into 2012, we had already decided to form EnBiotix. Jeff reached out to NAEJA Pharmaceutical and Great Lakes Drug Development and brought them on as cofounders, in addition to Apeiron Partners and BU, and officially named the company and issued shares to co-founders in July 2012.

NBT: What programs are you prioritizing within the company?

JC: Our top priority within the company is our reactive oxygen species (ROS) program—we are working to find small molecules that enhance the endogenous microbial production of ROS and can be used to potentiate the bactericidal activity of existing antibiotics against Gram-negative bacteria.

NBT: What do you most enjoy about starting a company?

JC: I am most intrigued and excited by the challenges of transforming a project into a product.