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VC Deals Analysis: Liquid Biopsy Summons Yet Another Top A-Lister

by Tina Tan

While August may have broken the short summer bull run, last month's batch of venture fundraisings did have one redeeming feature – it recorded the biggest Series A round this year to date, a \$50m deal by liquid biopsy company Karius.

Venture financing activity levels did heat up in tandem with the summer temperatures, as May, June and July each surpassed the previous year's performance. However, August saw deal volume and value take a sharp drop with only 21 fundraisings and around \$257m raised in total.

While August was only able to muster two thirds of the deal volume seen in [July](#), this was on par with the level seen in August last year. (See Figure 1). Additionally, August's deal value might have fallen significantly short of July's total takings of \$398m, this is still in line with previous year's performance.

Figure 1

No. of VC deals by amount raised, Aug 2017 vs July 2017 vs Aug 2016

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Indeed, looking at the five-year data from *Medtech Insight's* VC deal tracker in Figure 2, August has always signaled a downturn in financing activity (with the exception of [August 2015](#) which saw a big spike from not just one but two nine-figure financing rounds). The slowdown in August could likely be explained by the holiday period in both the US and Europe, when Congress and EU Parliament go into recess and industry also takes time for some R&R.

Figure 2

Total VC deal value, Jan-Aug 2013-2017

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Liquid biopsy grabs top bucks

Notably, August's biggest deal is a \$50m series A – the biggest series A this year to date – by Karius Inc., a company developing a liquid biopsy test for infectious diseases. The *Karius Digital Culture* test uses a combination of machine learning, proprietary genomics algorithms and next-generation sequencing to detect cell-free DNA fragments left by bacteria, viruses, fungi, and other eukaryotic pathogens from a patient's blood sample. The test can detect over 1,250 pathogens within one business day, according to Karius.

The Redwood City, California firm raised the funds from its existing investors – Data Collective, Lightspeed Venture Partners (these two co-led the round), Innovation Endeavors and Spectrum 28 – and also welcomed new investors, Chinese tech group Tencent and Khosla Ventures, the VC started up by co-founder of Sun Microsystems, Vinod Khosla.

Karius said it will use the proceeds for ongoing and new clinical trials to validate the technology, scale up laboratory capacity, and advance commercialization.

The \$50m round may be the largest series A this year to date, but it still lags some distance behind the \$100m series A that went into Grail, also in liquid biopsy. Grail was spun out of Illumina and is working to develop a single blood test that can screen for different types of cancer.

Liquid biopsy might be a hot investment area but aside from Karius, the other deals that made it to August's top 5 were not IVD-related. (See Table 1).

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Ranking	Company	Based in	Product/ Therapy sector	Amount raised	Financing round	Total investment
1	Karius	CA, US	IVD	\$50m	Series A	Undisclosed
2	AbleTo	NY, US	Digital health	\$36.6m	Series D	\$57.4m
3	SetPoint Medical	CA, US	Neuromodulation	\$30m	Series D	\$90m

4	Neuros Medical	OH, US	Neuromodulation	\$20m	Series AA Undisclosed
5	Shape Memory Medical	CA, US	Neurology/Vascular	\$18m	Part of an expected \$25m Series B Undisclosed

Neuromodulation keeps diversifying

Two of the three neuromodulation deals in August were among the top 5 biggest rounds: SetPoint Medical, which raised \$30m in series D financing, and Neuros Medical, which raised \$20m in series AA funds. These two companies might be in the area of neuromodulation but their technologies and target indications could not be more different. While [SetPoint](#) is developing a vagus nerve stimulation system for treating inflammation diseases like rheumatoid arthritis, Neuros' Electrical Nerve Block uses a cuff electrode coiled around a peripheral nerve to block post-amputation pain.

The third neuromodulation company that also caught investors' interest in August – although not enough to make it to the top 5 – was NeoSync, which raised \$13m in series C funds to support trials of its transcranial magnetic stimulation therapy for treatment-resistant depression. The diversity of these three companies underline how neuromodulation is moving into increasingly diverse applications and, more importantly, investors' growing belief that "bioelectronic medicine" offer a new form of therapy for conditions traditionally treated with drugs. For other evidence of how attractive this space is becoming, one only has to look at the uptick in interest from non-medtech players like GSK, which set up a bioelectronic medicines-focused fund (Action Potential Venture Capital) and Verily. Both have spent the last couple of years laying down the groundwork through investments and partnerships to ensure they have a secure footing in this market. (Also see "[GSK Venture Fund Selects Neurostim Device Maker SetPoint Medical As First Investment](#)" - Medtech Insight, 27 Sep, 2013.) (Also see "[New GSK-Verily IV Aims For Smart, 'Grain Of Rice' Neuromod Tech](#)" - Medtech Insight, 2 Aug, 2016.)

Overall, August saw the financing deals spread relatively evenly across different product/therapy sectors. There was not one sector that had the most number of deals: instead, four sectors – cardiovascular, digital health, IVD and neuromodulation – each got no more than three deals and the remainder were spread across seven other sectors. (See Figure 3).

Figure 3

No. of VC deals by product/therapy sector, Aug 2017

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For more details about VC deals in 2017 and previous years, go to Medtech Insight's VC deal tracker: <https://medtech.pharmamedtechbi.com/datasets/vc-funding>

From the editors of Clinica.