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High-value dealmaking strengthens big pharma's CNS ambitions

Diseases of the central nervous system continue to catalyse dealmaking as companies search for new therapies to tackle some major unmet medical needs.

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Several high-value licensing deals or acquisitions made in 2022 in the central nervous system (CNS) therapeutic area involve large pharma companies, suggesting a resurgence of interest in the field among such companies. The deals (see deal snapshots) involve a range of approaches for CNS diseases, including small-molecule antagonists of the calcitonin gene-related peptide (CGRP) receptor for migraines, small-molecule modulators of the synaptic vesicle protein 2A (SV2A) for Alzheimer's disease and major depressive disorder, and gene therapies based on adeno-associated virus (AAV) vectors.

Pfizer led the high-value dealmaking with its \$11.6-billion acquisition of Biohaven Pharmaceuticals and its potential blockbuster migraine therapy Nurtec (rimegepant) in May 2022.

Rimegepant, an oral small-molecule CGRP antagonist, has been approved in the US for both the acute treatment of migraine and the preventative treatment of episodic migraine, and has also been approved in the EU under the name Vydura.

AbbVie also made a high-value acquisition in the CNS field, with its potential \$1-billion purchase of Syndesi Therapeutics in March 2022. Syndesi is focused on modulators of a novel target, SV2A, and its lead candidate is currently in phase 1b trials.

Finally, Novartis signed a potential \$1-billion deal with Voyager Therapeutics to gain access to the latter's RNA-based screening platform for AAV9- and AAV5-derived capsids for gene therapies.

Pfizer acquires Biohaven Pharmaceuticals

Deal announced: 10 May 2022
Deal value: \$11.6 billion

Deal background:

- Pfizer agrees to purchase Biohaven Pharmaceuticals and its marketed product Nurtec (rimegepant), a dual-acting migraine therapeutic that is approved for both acute treatment and episodic prevention of migraine in adults.
- Pfizer will also gain other calcitonin gene-related peptide (CGRP) receptor antagonists including BHV-3500 (zavegepant), which was formulated as an intranasal spray to treat acute migraine. Zavegepant is also in development as an oral soft gel for chronic migraine.
- Pfizer previously collaborated with Biohaven in November 2012 for the commercialization of rimegepant and zavegepant outside the US. Pfizer invested \$350 million to acquire 2.6% of Biohaven's common stock at the contemporaneous price of \$173 per share.

Novartis signs gene-therapy option licensing deal with Voyager Therapeutics

Deal announced: 8 March 2022
Deal value: \$1.75 billion

Deal background:

- Novartis signs a licensing deal with Voyager to develop three targets for CNS diseases and potentially two further targets using its Tropism Redirection of AAV by Cell-type-specific Expression of RNA (TRACER) capsid program.
- Voyager's TRACER capsid-discovery program is an RNA-based screening platform for developing AAV9- and AAV5-derived capsids that can deliver payloads for gene therapies.
- The deal includes an upfront payment of \$54 million to Voyager and, if the candidates are successful, the company could receive up to \$1.7 billion in milestone and royalty payments.

AbbVie acquires Syndesi Therapeutics

Deal announced: 1 March 2022
Deal value: \$1 billion

Deal background:

- AbbVie announces the acquisition of neuroscience company Syndesi Therapeutics and its portfolio of modulators of the synaptic vesicle protein 2A (SV2A).
- Syndesi shareholders will receive an upfront payment of \$130 million with the possibility of further payments up to \$870 million upon the achievement of certain milestones.
- Syndesi's lead candidate drug in development is a small molecule that is under evaluation to treat Alzheimer's disease and major depressive disorder by targeting nerve terminals and enhancing synaptic efficiency.