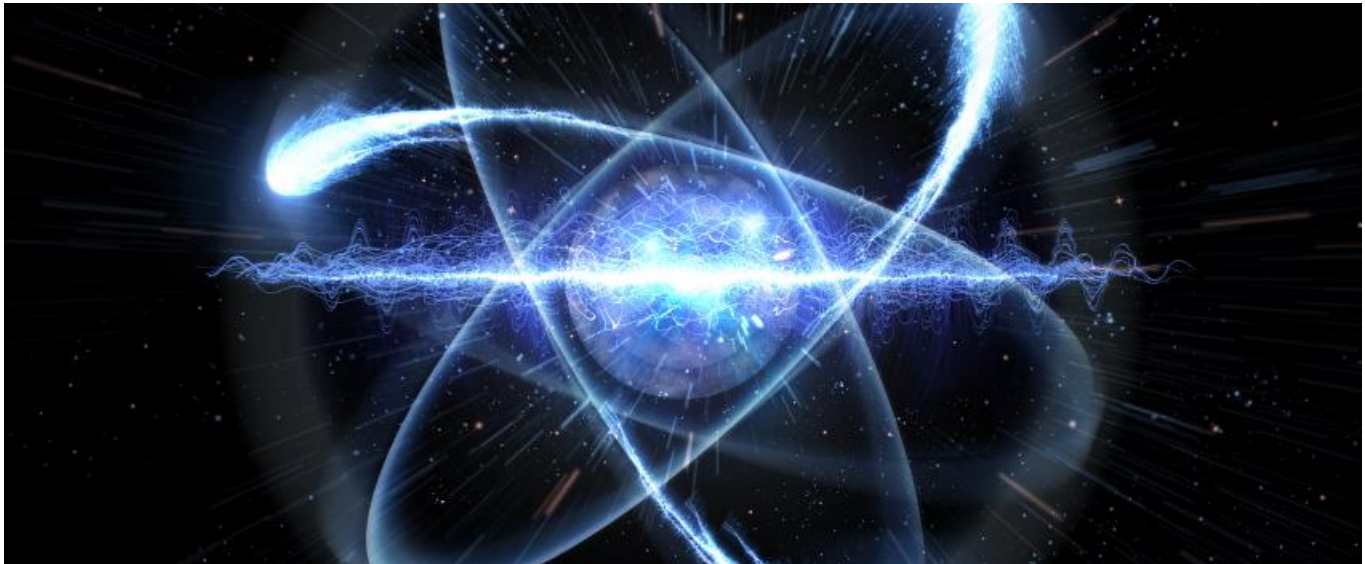


March 31, 2021

Radiotherapeutics remain in the deal-making frame



[Jacob Plieth](#)



A radionuclide deal between Lantheus and Noria mirrors that done by Novartis and Sofie, among others.

Drug development is experiencing a quiet surge of interest in radioisotope conjugates. Within this, deal bankers will have noted another trend: buying rights to products currently used as radiotracers with a view to redesigning these for therapeutic purposes.

Yesterday Lantheus Holdings did a deal that could end up having such a focus, licensing from the private company Noria Therapeutics rights to NTI-1309, a PET oncology imaging agent. Lantheus's plan is to take NTI-1309 through clinical trials and offer it to pharma companies for use in oncology drug development.

The primary focus remains on NTI-1309's use as an imaging agent, though it is possible that this might have therapeutic use if an interested company wanted to take things that way. This is precisely what Novartis also did yesterday in licensing two PET tracers from Sofie Biosciences ([Novartis goes nuclear, again, March 30, 2021](#)).

And the two deals have another key aspect in common: the assets involved all target fibroblast activation protein (FAP), a cell surface protein present on some cancers.

Selected radiopharmaceuticals targeting FAP

| Company | Project | Target | Radioisotope | Emits | Status |
|----------------------|----------|-----------|------------------|---------------|--------------------------------|
| Clovis | FAP-2286 | FAP | Lutetium-177 | Beta | Preclinical (ph1 tracer study) |
| Novartis | FAP-46 | FAP | ? | ? | Preclinical (ph1 tracer study) |
| Novartis | FAP-74 | FAP | ? | ? | Preclinical |
| Point Biopharma | PNT2004 | FAP-alpha | Lu-177 or Ac-225 | Beta or alpha | Preclinical |
| Lantheus Holdings | NTI-1309 | FAP | ? | ? | Preclinical |
| Boehringer Ingelheim | BIBH1 | FAP | Iodine-131 | Beta | Discontinued |

Source: company statements.

Little is disclosed about NTI-1309 beyond the fact that it hits FAP. The Sofie/Novartis assets, FAP-46 and FAP-74, are currently conjugated to the positron emitter gallium-68, and redirecting them to therapeutic use would typically involve substituting this radioisotope with one emitting alpha or beta radiation, such as actinium-225 or lutetium-177 respectively.

Lantheus has a focus on diagnostics and therapeutics, the latter through a pair of PSMA-targeting prostate cancer projects, I-131-1095 and the Bayer-partnered BAY 2315497. These respectively use iodine-131 and thorium-227 as radioisotope payloads.

That this is a hot area for deal-making is clear. Lantheus strengthened its position through an all-share takeover of Progenics in 2019. [Progenics had separately disputed Endocyte's rights to a PSMA-directed radiotherapeutic](#); Endocyte was acquired by Novartis.

Two years ago Clovis licensed 3B Pharmaceuticals' FAP-2286, another FAP-targeting asset being developed primarily for imaging when conjugated to gallium-68. But there is a secondary focus on therapeutic use if its conjugated radioisotope is changed to lutetium-177.

And, as far as deals go, perhaps the most prominent focus on the FAP target comes courtesy of Point Therapeutics, a group being listed on Nasdaq by reversing into a special-purpose acquisition company called Therapeutics Acquisition Corp ([Point's path leads to a Spac, March 19, 2021](#)). One of Point's pipeline projects, PNT2004, targets FAP-alpha, though a decision has yet to be made about the radioisotope this will use.

Expect Lantheus to pay close attention to any clinical progress made by Point, Clovis and Novartis.

Selected deals involving radiopharmaceuticals

| Acquirer | Deal source | Deal date | Selected deal terms | Project(s) included |
|-------------------|--|----------------|--|---|
| Bayer | Progenics | Apr 2016 | \$4m up front, \$49m R&D milestones | BAY 2315497 |
| Fusion | Immunogen | Dec 2016 | \$15m R&D milestones | FPI-1434 |
| Novartis | Advanced Accelerator Applications | Oct 2017 | \$3.9bn cash & stock acquisition | Lutathera, 177Lu-PSMA-R2, 177Lu-NeoB & 177Lu-FF-10158 |
| Endocyte | ABX Biomedizinische Forschungsreagenzien | Oct 2017 | \$12m up front, \$3.8m stock & warrants | 177Lu-PSMA-617 & 225Ac-PSMA-617 |
| Novartis | Endocyte | Oct 2018 | \$2.1bn cash acquisition | 177Lu-PSMA-617 & 225Ac-PSMA-617 |
| Sofie | University of Heidelberg | Jun 2019 | Not disclosed | FAPI-46 & FAPI-74 |
| Clovis | 3B Pharmaceuticals GmbH | Sep 2019 | \$12m up front | FAP-2286 |
| Fusion | Mediapharma | May 2019 | \$0.2m up front, \$1.5m R&D milestones | Undisclosed |
| Lantheus | Progenics | Oct 2019 | \$641m all-stock acquisition | I-131-1095 & BAY 2315497 |
| Fusion | Rainier Therapeutics | Mar 2020 | \$3.5m & stock up front; \$22.5m & stock R&D milestones; assumption of \$44m milestones to Roche | FPI-1966 |
| Point | Scintomics GmbH | Mar 2020 | Not disclosed | PNT2001 |
| Point | Bach Biosciences | Apr & Dec 2020 | \$0.6m & \$0.2m up front | PNT2004 |
| Point | Technische Universität München | Jun 2020 | Not disclosed | PNT2002 |
| Point | Canprobe | Jan 2021 | \$0.6m up front | PNT2003 |
| Fusion | Ipsen | Mar 2021 | Stock up front, €67.5m R&D milestones; assumption of €70m milestone to undisclosed third party | FPI-2059 |
| Novartis | Itheranostics/Sofie | Mar 2021 | Not disclosed | FAPI-46 & FAPI-74 |
| Lantheus Holdings | Noria Therapeutics | Mar 2021 | Not disclosed | NTI-1309 |

Source: company statements.