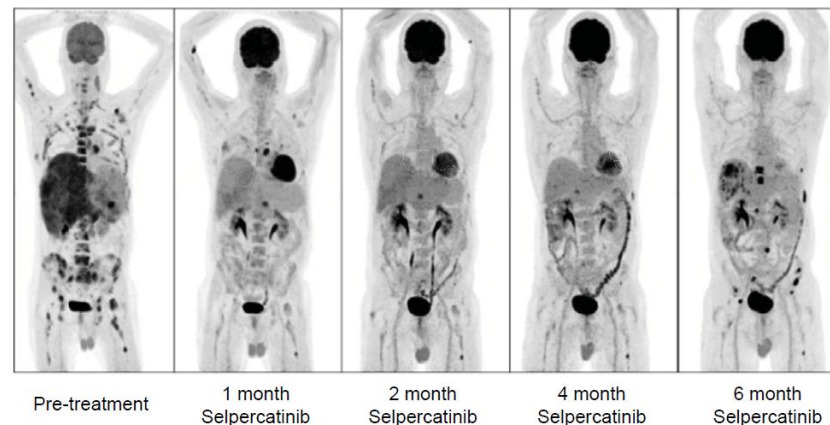
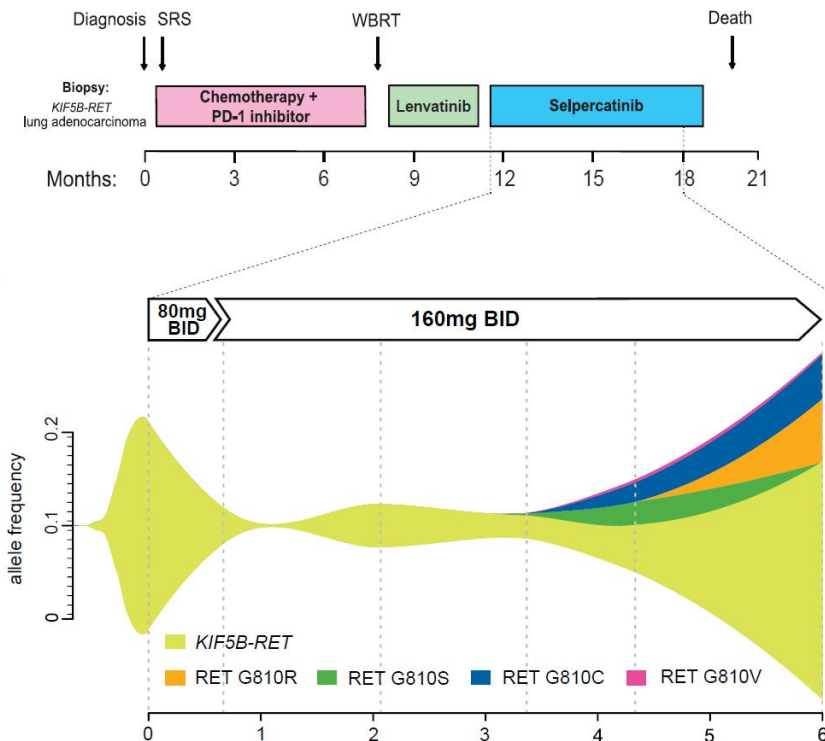
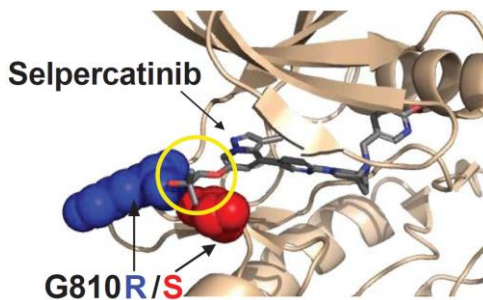


- Selpercatinib: highly RET-selective kinase inhibitor
 - First approved RET-targeted chemotherapy (May 13, 2020)
- Developed at LOXO oncology (LOXO-292), then LOXO was acquired by Eli Lilly.
- Taken twice a day (120–160 mg) orally
- RET (“Rearranged during transfection”) is a well-studied proto-oncogene
- Mutations in this kinase cause a variety of diseases, including cancers like non-small cell lung cancer (NSCLC) and papillary thyroid carcinoma (PLC)
 - 30-70% of invasive breast cancers
 - 50-60% of pancreatic ductal carcinomas
- Selpercatinib loses efficacy in RET solvent front mutations

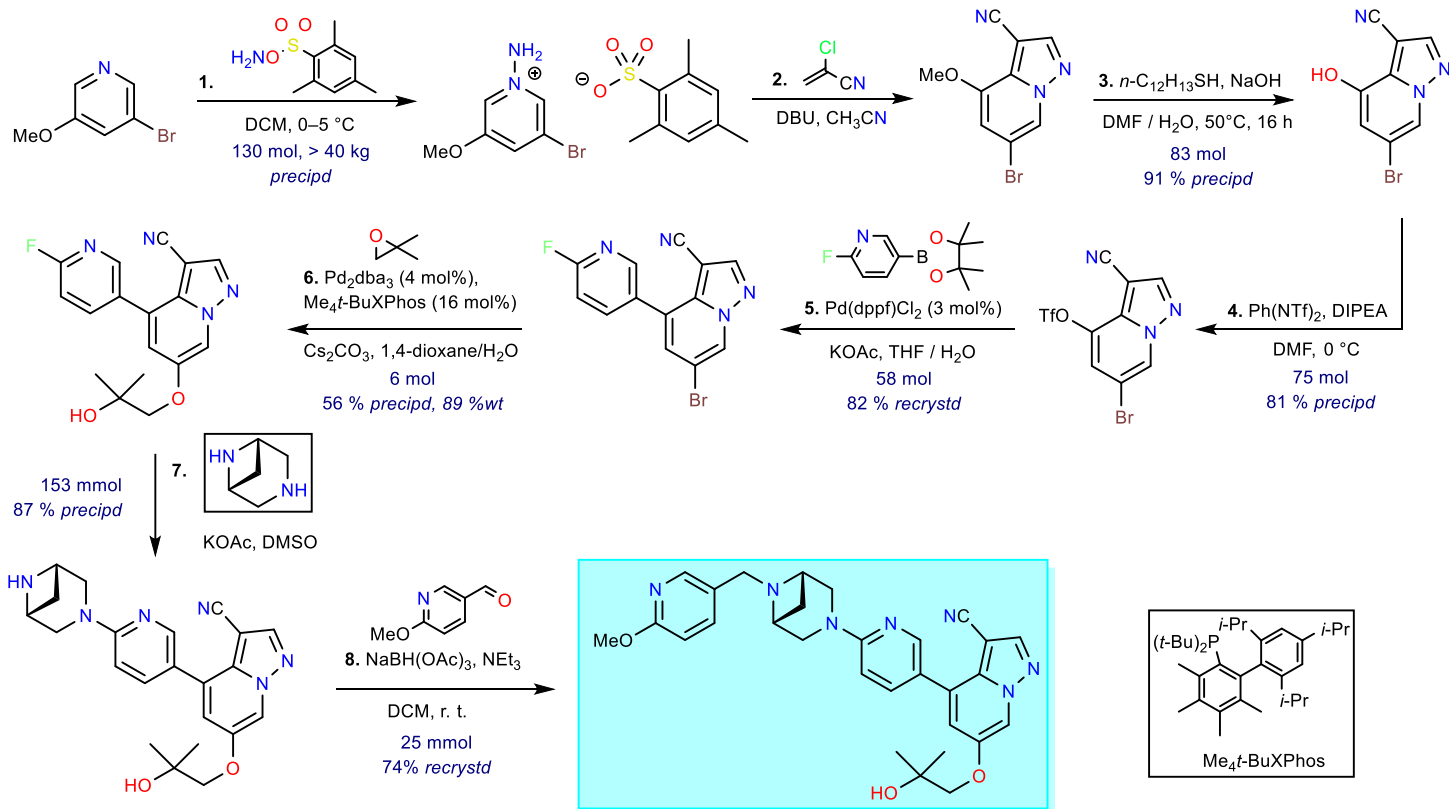
Case study (right side of the slide) shows a patient resistant to chemotherapy. IC90 reached in 8 days. Good response, decreased metabolism in metastases observed after 1 month. 3 months into the treatment, solvent front mutants were observed, not detectable before. Even at 240 mg twice daily no response. Treatment discontinued.

Kinase	IC50 (nM)
RET	6
RET G810S	395
RET G810R	3364
RET G810C	2144

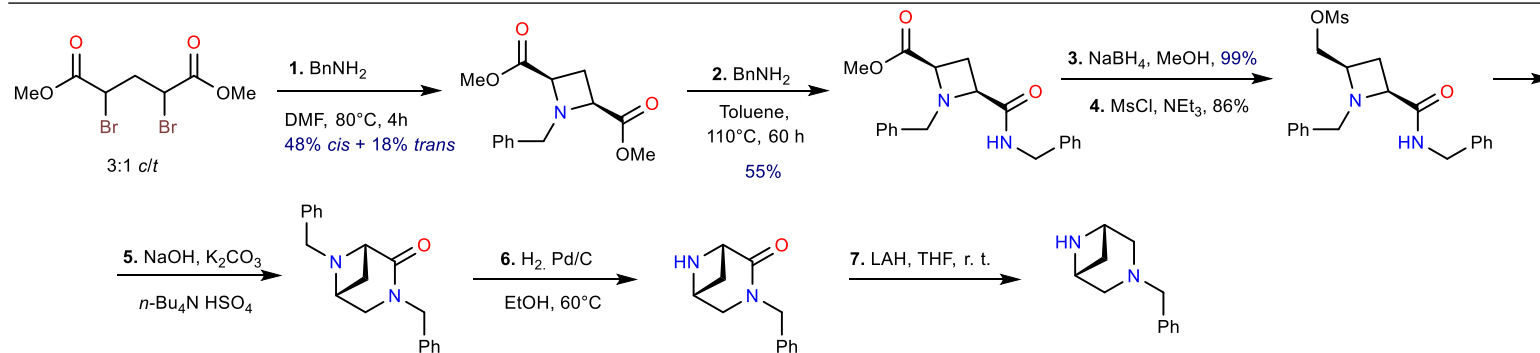


Cancer Treatment Reviews 2019, 81, 101911. <https://doi.org/10.1016/j.ctrv.2019.101911>.
Journal of Thoracic Oncology 2020, 15 (4), 541–549. <https://doi.org/10.1016/j.jtho.2020.01.006>.

Selpercatinib (Retevmo®)



US20190106438A1, April 11, 2019.



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