

To estimate the **Potential Peak Sales** for repotrectinib (AUGTYRO) in the indication of solid tumors with NTRK gene fusion in the US, EU5 (France, Germany, Italy, Spain, UK), China, and Japan, as well as the **\$ value of a 1% share of treated patients** in these geographies, we need to follow a structured approach. Since specific data on patient numbers, pricing, and market penetration for repotrectinib may not be publicly available at this stage, I will outline the methodology and make reasonable assumptions based on available information about rare cancers, NTRK fusion prevalence, and typical drug pricing for targeted therapies in oncology.

## **Step 1: Define the Target Population**

Repotrectinib is approved for solid tumors with NTRK gene fusion, a rare genetic alteration. NTRK fusions occur in approximately **0.5–1% of solid tumors**, with higher prevalence in certain rare cancers like infantile fibrosarcoma and secretory breast carcinoma. The indication covers patients who are locally advanced, metastatic, or where surgery would cause severe morbidity, and who have progressed after prior treatment or have no satisfactory alternatives.

- **US:** Annual incidence of solid tumors is ~1.7 million (American Cancer Society). Assuming 0.5–1% have NTRK fusions, this translates to ~8,500–17,000 patients. Considering the specific criteria (advanced/metastatic, progressed or no alternatives), we estimate ~2,000–4,000 eligible patients annually.

- **EU5:** Combined annual incidence of solid tumors in EU5 is ~1.2 million. Using the same prevalence, ~6,000–12,000 patients, with ~1,500–3,000 eligible.

- **China:** Annual incidence of solid tumors is ~4.3 million. NTRK fusion prevalence yields ~21,500–43,000 patients, with ~5,000–10,000 eligible.

- **Japan:** Annual incidence of solid tumors is ~0.9 million. NTRK fusion prevalence yields ~4,500–9,000 patients, with ~1,000–2,000 eligible.

Total eligible patients across geographies: ~9,500–19,000 annually.

## **Step 2: Market Penetration (20%–30% Share of Treated Patients)**

Given the rarity of NTRK fusions and the targeted nature of repotrectinib, along with competition from other TRK inhibitors like larotrectinib and entrectinib, we assume a **20%–30% market share** among eligible treated patients. This accounts for physician awareness, access, and payer dynamics.

- **US:** 20%–30% of 2,000–4,000 = 400–1,200 treated patients.

- **EU5:** 20%–30% of 1,500–3,000 = 300–900 treated patients.

- **China:** 20%–30% of 5,000–10,000 = 1,000–3,000 treated patients.

- **Japan:** 20%–30% of 1,000–2,000 = 200–600 treated patients.

Total treated patients at peak: ~1,900–5,700 annually.

## **Step 3: Pricing Assumptions**

Targeted therapies for rare cancers often have high annual costs. Larotrectinib and entrectinib, comparable TRK inhibitors, are priced at ~\$250,000–\$400,000 per patient per year in the US. Pricing in

other regions is typically lower due to healthcare system differences:

- **US:** ~\$350,000 per patient per year.
- **EU5:** ~\$200,000 per patient per year (discount due to price negotiations).
- **Japan:** ~\$250,000 per patient per year.
- **China:** ~\$100,000 per patient per year (lower due to pricing controls and access programs).

## **Step 4: Calculate Potential Peak Sales**

Peak sales are calculated by multiplying the number of treated patients by the annual cost per patient in each region.

- **US:** 400–1,200 patients × \$350,000 = **\$140M–\$420M**.
- **EU5:** 300–900 patients × \$200,000 = **\$60M–\$180M**.
- **China:** 1,000–3,000 patients × \$100,000 = **\$100M–\$300M**.
- **Japan:** 200–600 patients × \$250,000 = **\$50M–\$150M**.

**Total Potential Peak Sales: \$350M–\$1,050M** annually across these geographies.

## **Step 5: Calculate \$ Value of 1% Share of Treated Patients**

A 1% share of treated patients refers to 1% of the total eligible patients (not the 20%–30% market share), as this reflects the value of capturing a small fraction of the market.

- **US:** 1% of 2,000–4,000 = 20–40 patients × \$350,000 = **\$7M–\$14M**.
- **EU5:** 1% of 1,500–3,000 = 15–30 patients × \$200,000 = **\$3M–\$6M**.
- **China:** 1% of 5,000–10,000 = 50–100 patients × \$100,000 = **\$5M–\$10M**.
- **Japan:** 1% of 1,000–2,000 = 10–20 patients × \$250,000 = **\$2.5M–\$5M**.

**Total \$ Value of 1% Share: \$17.5M–\$35M** annually across these geographies.

## **Key Assumptions and Caveats**

1. **Patient Numbers:** Based on rough estimates of NTRK fusion prevalence and eligibility criteria. Real-world numbers may differ based on diagnostic testing rates and disease progression.
2. **Pricing:** Assumed based on comparable TRK inhibitors. Actual pricing for repotrectinib may vary due to payer negotiations, rebates, and access programs.
3. **Market Share:** 20%–30% is a reasonable range given competition and rarity, but uptake could be influenced by clinical differentiation, marketing, and reimbursement.
4. **Peak Sales Timing:** Assumes peak sales are reached after a few years of launch, factoring in market penetration and awareness.

## **Final Answer**

- **Potential Peak Sales for Repotrectinib** in the US, EU5, China, and Japan (assuming 20%–30% market share): **\$350 million to \$1,050 million annually**.

- **\$ Value of 1% Share of Treated Patients** in these geographies: **\$17.5 million to \$35 million annually**.

These estimates are subject to refinement with more precise epidemiological data, pricing information, and market dynamics specific to repotrectinib. If you have additional data or specific inputs, I can adjust the calculations accordingly.