

To estimate the **Potential Peak Sales** for "atezolizumab and hyaluronidase-tqjs" (Tecentriq Hybreza) in the specified indications (NSCLC, SCLC, HCC, melanoma, and ASPS) across the US, EU5 (Germany, France, 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 populations, pricing, and market dynamics may not be fully available, I will outline the methodology and make reasonable assumptions based on available information about oncology markets, atezolizumab's performance, and typical market shares for such drugs. Let's break this down step by step.

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## **Step 1: Key Assumptions and Methodology**

1. **Indications Covered:** The drug is approved for NSCLC, SCLC, HCC, melanoma, and ASPS in adults. NSCLC and melanoma are likely to be the largest contributors due to higher prevalence, while ASPS is rare and contributes minimally.
2. **Market Share:** The problem assumes a 20% to 30% share of treated patients. We will calculate peak sales for both ends of this range.
3. **Geographies:** US, EU5, China, and Japan. These are major pharmaceutical markets with varying pricing and access dynamics.
4. **Pricing:** Atezolizumab (IV formulation) pricing varies by region. For simplicity, we assume an annual treatment cost per patient based on public data or estimates:
  - US: ~\$150,000 per patient per year (based on typical immunotherapy costs).
  - EU5: ~\$100,000 per patient per year (lower due to pricing negotiations).
  - Japan: ~\$120,000 per patient per year (similar to the US but slightly discounted).
  - China: ~\$50,000 per patient per year (lower due to pricing controls and generics competition).
5. **Patient Population:** Estimate the total number of treatable patients in each indication and geography using epidemiology data (incidence/prevalence) and treatment-eligible rates.
6. **Peak Sales Timing:** Peak sales typically occur 5-7 years post-launch when market penetration is maximized before patent expiry or biosimilar competition.
7. **Subcutaneous Advantage:** The subcutaneous formulation (Tecentriq Hybreza) may increase adoption due to ease of administration compared to IV, potentially boosting market share slightly over the IV formulation.

Since exact patient numbers are not provided, I will use approximate figures for incident and prevalent cases eligible for treatment based on oncology market research and publicly available data.

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## **Step 2: Estimate Treatable Patient Population**

Below is an approximate number of treated patients per year for the key indications in each geography. These numbers are derived from cancer incidence data (e.g., GLOBOCAN, SEER), treatment rates, and eligibility for immunotherapy (assuming ~20-40% of patients are eligible for PD-L1 inhibitors like atezolizumab based on disease stage and biomarker status).

#### #### Approximate Treated Patients per Year (Eligible for Immunotherapy)

Indication	US	EU5	China	Japan	Total
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NSCLC	40,000	50,000	80,000	20,000	190,000
SCLC	5,000	6,000	10,000	3,000	24,000
HCC	8,000	10,000	50,000	10,000	78,000
Melanoma	10,000	12,000	5,000	2,000	29,000
ASPS (Rare)	100	100	200	50	450
<b>Total Treated</b>	63,100	78,100	145,200	35,050	321,450

#### Notes:

- NSCLC dominates due to high incidence and immunotherapy eligibility (e.g., PD-L1 expression).
- HCC has a large patient pool in China due to high hepatitis-related liver cancer rates.
- These numbers are rough estimates and assume a steady state of treated patients annually.

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### **Step 3: Estimate Potential Peak Sales (20% and 30% Market Share)**

Using the assumed annual treatment cost per patient and the market share range (20%-30%), we calculate peak sales for each geography.

#### #### Annual Treatment Cost per Patient

- US: \$150,000
- EU5: \$100,000
- China: \$50,000
- Japan: \$120,000

#### #### Peak Sales Calculation

##### **Total Treated Patients with 20% Market Share:**

Geography	Treated Patients	20% Share	Annual Cost/Patient	Peak Sales (20%)
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US	63,100	12,620	\$150,000	\$1.893B
EU5	78,100	15,620	\$100,000	\$1.562B
China	145,200	29,040	\$50,000	\$1.452B
Japan	35,050	7,010	\$120,000	\$0.841B
<b>Total</b>	321,450	64,290	-	<b>\$5.748B</b>

### Total Treated Patients with 30% Market Share:

| Geography | Treated Patients | 30% Share | Annual Cost/Patient | Peak Sales (30%) |

|-----|-----|-----|-----|-----|

| US | 63,100 | 18,930 | \$150,000 | \$2.840B |

| EU5 | 78,100 | 23,430 | \$100,000 | \$2.343B |

| China | 145,200 | 43,560 | \$50,000 | \$2.178B |

| Japan | 35,050 | 10,515 | \$120,000 | \$1.262B |

| **Total** | 321,450 | 96,435 | - | **\$8.623B** |

**Potential Peak Sales Range: \$5.75B to \$8.62B annually** across the US, EU5, China, and Japan for the specified indications, assuming a 20%-30% market share of treated patients.

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### Step 4: \$ Value of 1% Share of Treated Patients

To calculate the \$ value of a 1% share of treated patients, we divide the peak sales at 20% share by 20 (or at 30% share by 30), or equivalently, calculate based on 1% of the total treated patients.

| Geography | Treated Patients | 1% Share | Annual Cost/Patient | \$ Value of 1% Share |

|-----|-----|-----|-----|-----|

| US | 63,100 | 631 | \$150,000 | \$94.65M |

| EU5 | 78,100 | 781 | \$100,000 | \$78.10M |

| China | 145,200 | 1,452 | \$50,000 | \$72.60M |

| Japan | 35,050 | 350.5 | \$120,000 | \$42.06M |

| **Total** | 321,450 | 3,214.5 | - | **\$287.41M** |

**\$ Value of 1% Share of Treated Patients:** Approximately **\$287.4M annually** across all geographies.

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### Step 5: Key Considerations and Limitations

- Market Dynamics:** Atezolizumab faces competition from other PD-1/PD-L1 inhibitors (e.g., pembrolizumab, nivolumab) and emerging therapies. The 20%-30% market share assumption may be optimistic in some indications.
- Pricing Variability:** Pricing can differ significantly within EU5 countries and may be lower in China due to national reimbursement policies or local manufacturing.
- Patient Access:** Not all eligible patients may receive treatment due to cost, access, or clinical guidelines.

4. **Subcutaneous Advantage:** The subcutaneous formulation may increase adoption over IV, but this is not quantified in the estimate.

5. **Patent Expiry:** Peak sales assume no significant biosimilar competition during the peak period.

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## **Final Answer**

- **Potential Peak Sales for atezolizumab and hyaluronidase-tqjs** in the specified indications (NSCLC, SCLC, HCC, melanoma, ASPS) across the US, EU5, China, and Japan, assuming a 20%-30% market share of treated patients: **\$5.75B to \$8.62B annually**.

- **\$ Value of 1% Share of Treated Patients** across these geographies: Approximately **\$287.4M annually**.

These figures are estimates based on reasonable assumptions and should be refined with more specific data on patient populations, pricing, and market penetration rates if available.