ORIGINATOR PRICE REDUCTIONS AND UPTAKE-RELATED SAVINGS ASSOCIATED WITH BIOSIMILAR AVAILABILITY: A BUDGET IMPACT ANALYSIS OF 12 BIOLOGIC MOLECULES IN SOUTH KOREA

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Study highlights

USD 386.51M

ESTIMATED TOTAL ANNUAL EXPENDITURE SAVINGS (2025)

32% of estimated originator-only spending at pre-biosimilar-entry prices

USD 336.46M

ORIGINATOR PRICE REDUCTIONS

87% of total estimated savings

USD 50.05M

UPTAKE-RELATED SAVINGS

13% of total estimated savings

M=Million

BACKGROUND

- Biosimilar availability can reduce pharmaceutical expenditure through two mechanisms: reductions in originator prices and increased use of lower-cost biosimilars.
- Distinguishing the contributions of these mechanisms is important for understanding the budgetary impact of biosimilar availability and informing policies to improve the sustainability of biologic spending.

OBJECTIVES

- We estimated pharmaceutical expenditure savings associated with biosimilar availability in South Korea for 2025 and decomposed these savings into contributions from originator price reductions and biosimilar uptake. Savings were also examined by therapeutic area and molecule.

METHODS

Data sources

Patient counts and drug costs
Quarterly patient counts and per-patient drug costs
HIRA claims

Originator prices
Prices before biosimilar entry and at current levels
HIRA price listings

Sales-volume shares
Quarterly originator/biosimilar sales-volume shares and observed volume trends
IQVIA

Patient Count Projection and Biosimilar Market Share Estimation for 2025
Rolling CAGR for patient counts; historical uptake trends for biosimilar shares

Three scenarios → Savings decomposition

Figure 1. Data sources and forecasting framework

HIRA, Health Insurance Review and Assessment Service

- HIRA claims data (March 2021–March 2025) provided quarterly patient counts and per-patient drug costs. Pre-biosimilar-entry and May 2026 originator prices from HIRA price listings were used to calculate originator price ratios, while IQVIA provided molecule-specific quarterly sales-volume shares (see **Figure 1**).
- For 2025, Q2–Q4 patient counts were projected using the lower of the 1-year and 2-year rolling Compound annual growth rates (CAGRs), while Q4 biosimilar shares were projected using therapeutic area-specific quarterly growth rates based on time since biosimilar entry. Annual expenditure was estimated by summing quarterly expenditures under each scenario.

Three analytic scenarios

Scenario 0 (S0) No biosimilar entry	Pre-entry originator prices; no biosimilar uptake	**Price-reduction = S0 - S1**
Scenario 1 (S1) Price reduction only	Current originator prices; no biosimilar uptake	**Uptake-related savings = S1 - S2**
Scenario 2 (S2) Estimated 2025 market scenario	Reduced originator prices; biosimilar uptake incorporated	

Total savings = (S0 - S1) + (S1 - S2)

Included molecules

- Twelve biologic molecules with biosimilars available in South Korea were included in the analysis.

Adalimumab	Aflibercept	Bevacizumab
Denosumab	Eculizumab	Etanercept
Infliximab	Omalizumab	Ranibizumab
Rituximab	Trastuzumab	Ustekinumab

Note: Expenditures were converted to USD using the 2025 annual average exchange rate of KRW 1,422 per USD (KOSIS).

RESULTS

- Estimated pharmaceutical expenditure for 2025 was USD 808.77 million under the current-market scenario, compared with USD 1,195.28 million under the hypothetical no-biosimilar-entry scenario, corresponding to savings of 32% (**Figure 2**).
- Originator price reductions accounted for 87% of total savings, approximately 6.7 times the contribution of biosimilar uptake.

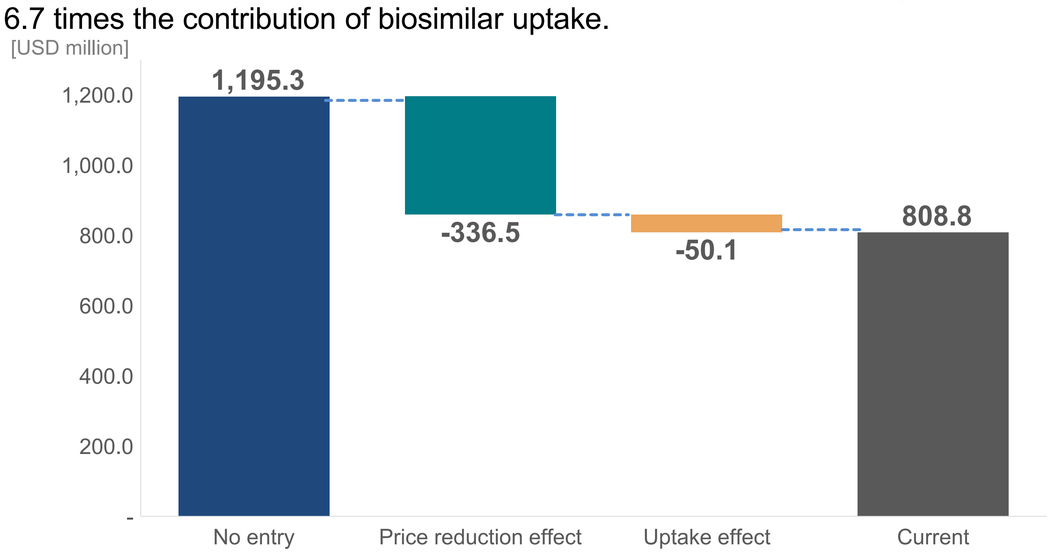

Figure 2. Savings decomposition

- Among the three therapeutic areas presented, the largest absolute savings were observed in oncology (USD 127.99 million), followed by immunology and related diseases (USD 116.32 million) and ophthalmology (USD 62.26 million).
- Bevacizumab contributed the greatest savings attributable to originator price reductions (USD 69.69 million), whereas ranibizumab contributed the greatest uptake-related savings (USD 15.27 million) (**Figure 3**).

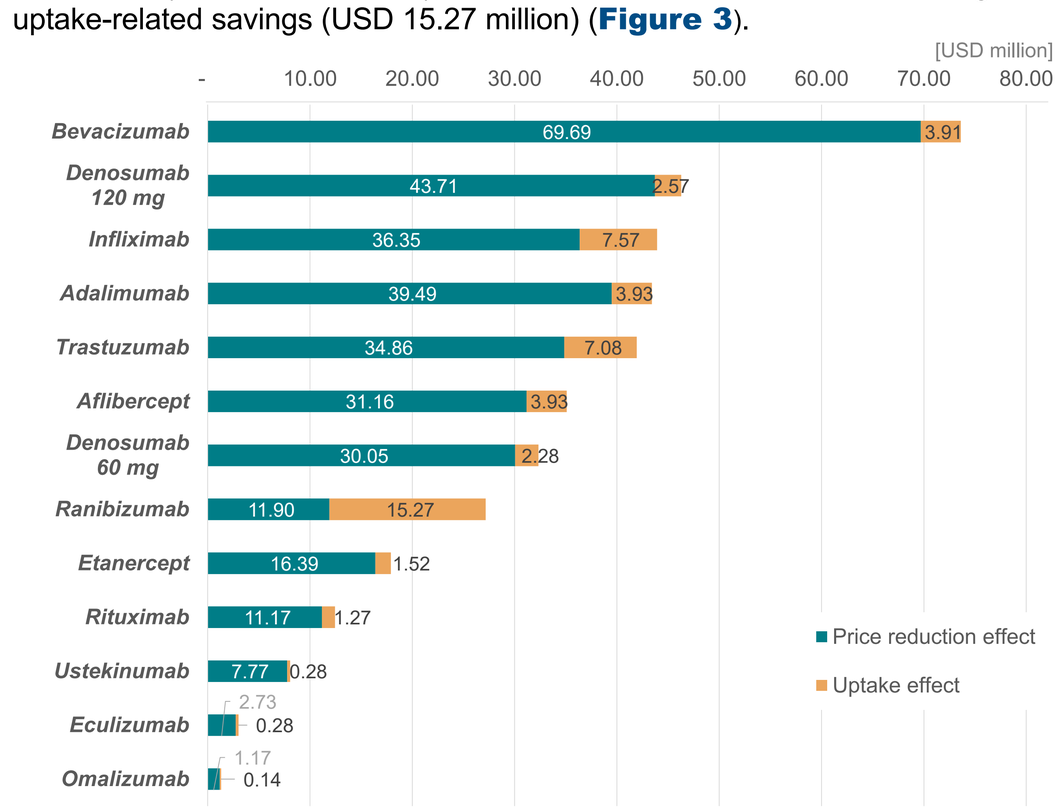

Figure 3. Molecule-specific savings

Note: Denosumab was presented separately by strength (60 mg and 120 mg).

LIMITATIONS

- The no-biosimilar-entry scenario was reconstructed using historical originator prices rather than directly observed counterfactual expenditures.
- Estimates for certain quarters relied on projected patient counts and biosimilar market shares, introducing uncertainty related to forecasting assumptions.

CONCLUSIONS

- Compared with a hypothetical market without biosimilar entry, biosimilar availability was associated with an estimated 32% reduction in pharmaceutical expenditure in South Korea in 2025. Originator price reductions accounted for the majority of estimated savings (87%), while biosimilar uptake contributed an additional 13%.
- These findings highlight the importance of originator price changes in the budgetary impact of biosimilar availability. Policies that support sustainable price competition and appropriate biosimilar uptake may help improve the efficiency of biologic pharmaceutical spending.