



*Due Diligence*

## Due Diligence Annotation Report

### Sanofi To Buy Translate Bio For \$3.2 Billion

Date of Analysis: August 10, 2021

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**On August 3, 2021, French pharmaceuticals company Sanofi announced the acquisition of US-based Translate Bio.**

- 
- Sanofi — a global pharmaceutical firm — acquired Translate Bio in an effort to advance mRNA vaccines, for which the two companies had entered an into an exclusive license agreement in June 2018.
  - Founded in 2011 in Lexington, MA, Translate Bio is a leader in mRNA therapeutics and has applied it to treating genetic and infectious diseases.
  - mRNA vaccines are a highly-regarded vaccine type. Therefore, we found that the patent portfolio of Translate Bio may have a decent chance of being monetized.

# Coverage and Status - Global Coverage

Applications: 623

Families: 131

## Active

264 (43%)

of them are active and enforceable.

## Pending

306 (49%)

of them are still pending and may acquire patent rights in the future.

## Inactive

51 (8%)

Inactive

Country : US(156) EP(100) AU(68) WO(57) CA(57) CN(24)  
JP(23) ES(21) DK(21) IL(14) HK(7) HU(6)  
RS(6) SI(6) TR(6) PT(6) LT(6) HR(6)  
KR(6) PL(5) CY(5) IN(4) ME(4) EA(2)  
SG(2) MX(1) UA(1)



Country	Patent Appl.	Legal Status		
US	<a href="#">156</a>	81	58	17
EP	<a href="#">100</a>	36	51	13
AU	<a href="#">68</a>	28	39	1
WO	<a href="#">57</a>	42	15	
CA	<a href="#">57</a>	2	54	1
CN	<a href="#">24</a>	2	20	2
JP	<a href="#">23</a>	12	9	2
ES	<a href="#">21</a>	21		
DK	<a href="#">21</a>	21		
IL	<a href="#">14</a>	14		

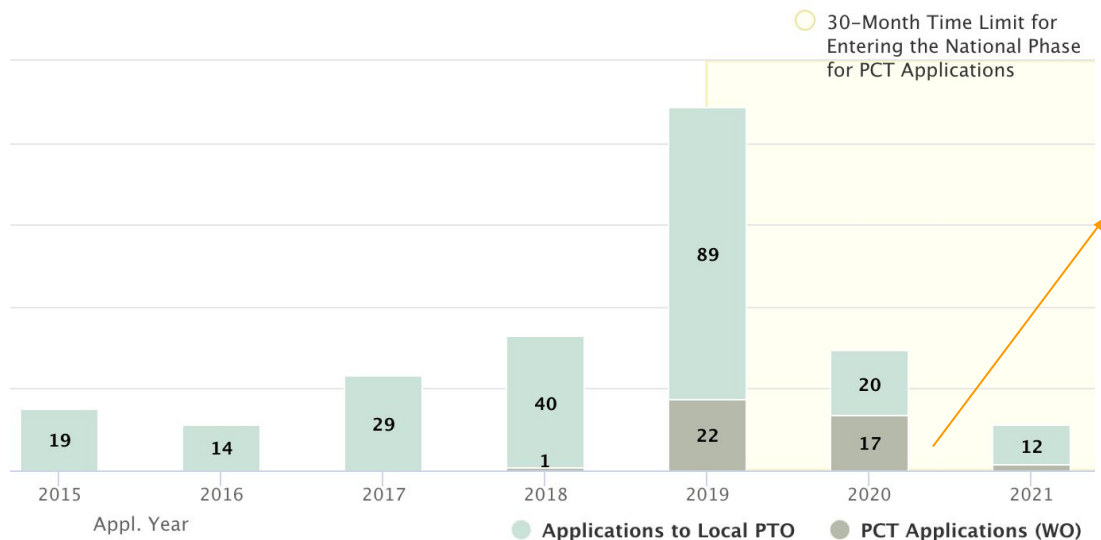
● Active ● Pending ● Inactive

Nearly half of the patent applications are pending, indicating sustained innovation. The major markets include the US, Europe, and Australia, with an ongoing deployment in Canada.

## Coverage and Status - Pending Patents

Translate Bio has had many applications over the past three years, with a decent proportion of them filed at the WIPO.

You can get a [free trial](#) to access the dashboard.



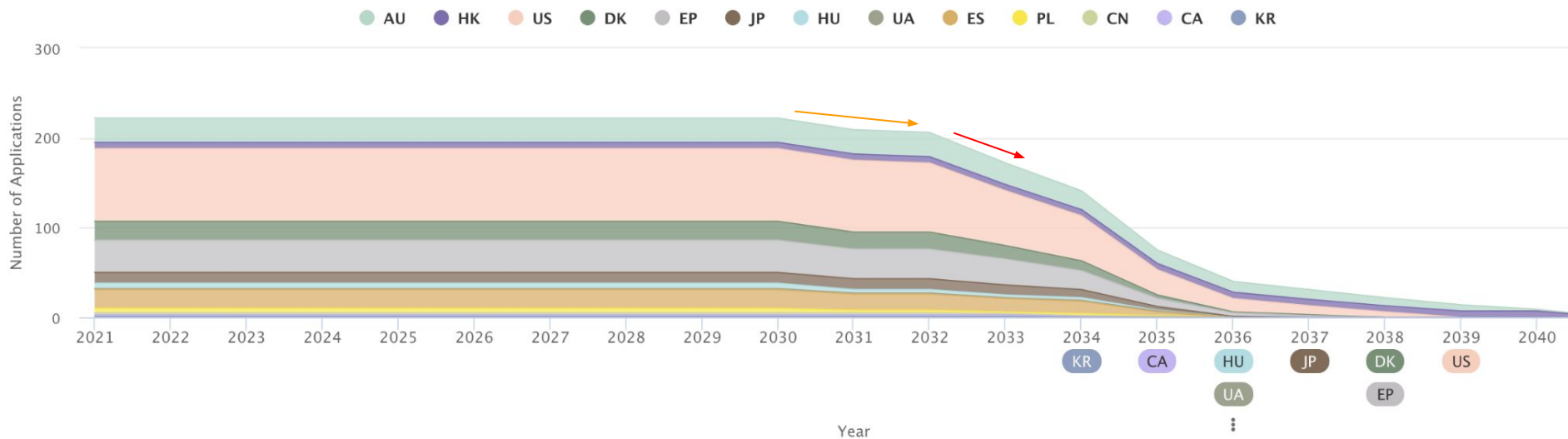
Data Selected 17 Applications; 17 Families

#	Patent No.	Title	Legal Status
1	<a href="#">WO2021/12739...</a>	RECTAL DELIVERY OF MESSENGER RNA	Pending
2	<a href="#">WO2021/00727...</a>	IMPROVED MRNA-LOADED LIPID NANOPARTICLE...	Pending
3	<a href="#">WO2020/23227...</a>	IMPROVED PROCESS OF PREPARING MRNA-LOA...	Pending
4	<a href="#">WO2021/01643...</a>	STABLE COMPOSITIONS OF MRNA-LOADED LIPID...	Pending
5	<a href="#">WO2021/07217...</a>	COMPOSITIONS, METHODS AND USES OF MESSE...	Pending
6	<a href="#">WO2021/05560...</a>	MRNA ENCODING ENGINEERED CFTR	Pending

A list of Translate Bio's WIPO applications for each year can be seen.

# Coverage and Status - Remaining Life

The company's patent portfolio begins to shrink more rapidly after 2030 — driven mainly by the expiring patents in Australia and the US. The number of active patents further declines after 2032.



# Technologies

In terms of the International Patent Classification (IPC,) the company has nearly 50% of the patent families filed under “preparations for medical, dental, or toilet purposes” (IPC A61K.)

Main technical fields 1

**PREPARATIONS FOR MEDICAL, DENTAL, OR TOILET PURPOSES**

**64** Patent families (49%)

Main technical fields 2

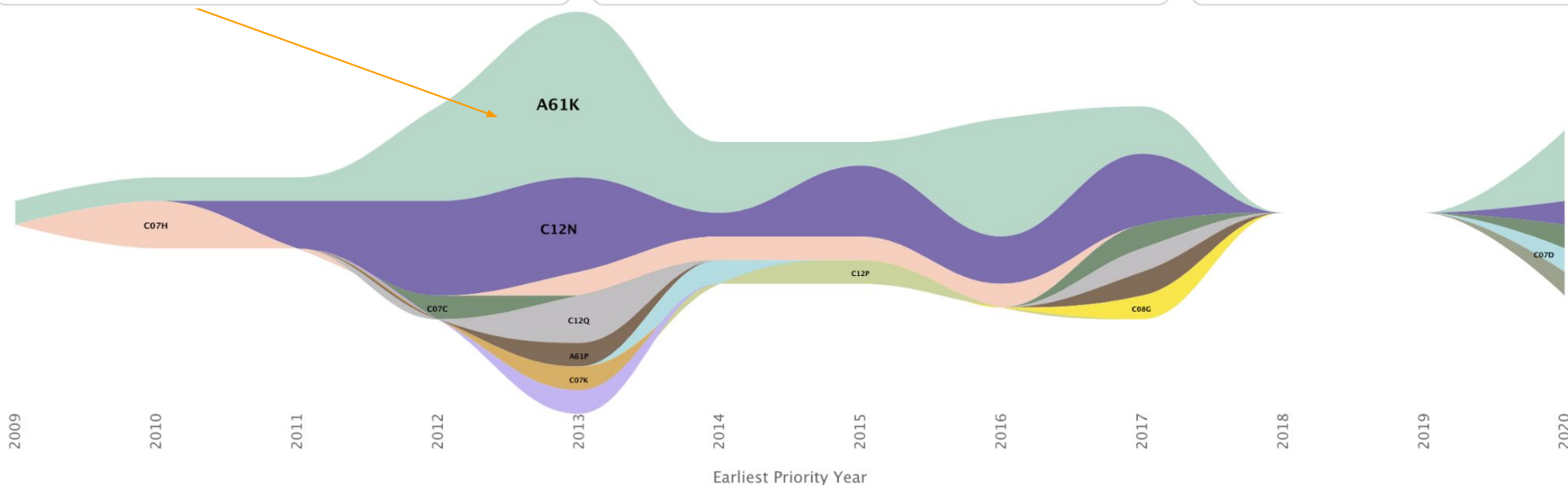
**MICROORGANISMS OR ENZYMES; COMPOSITIONS THEREOF**

**26** Patent families (20%)

Main technical fields 3

**ACYCLIC OR CARBOCYCLIC COMPOUNDS**

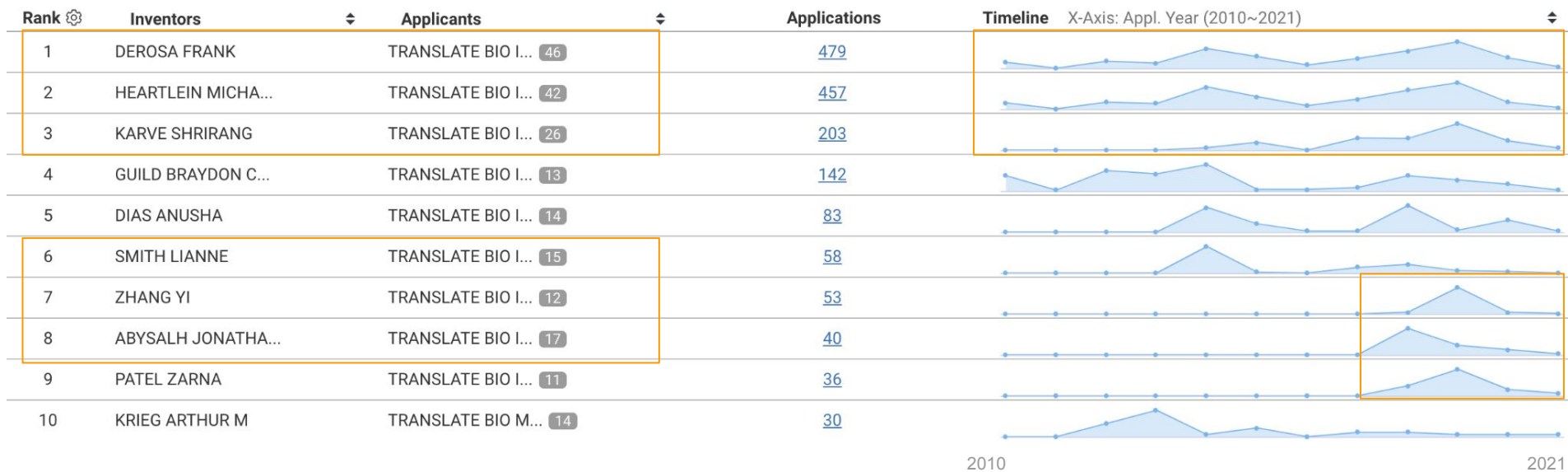
**8** Patent families (6%)





# Top Inventors

Amongst the top ten inventors, the top three and those in the 6th, 7th, and 8th positions were highly productive in recent years.



# Patent Transaction History

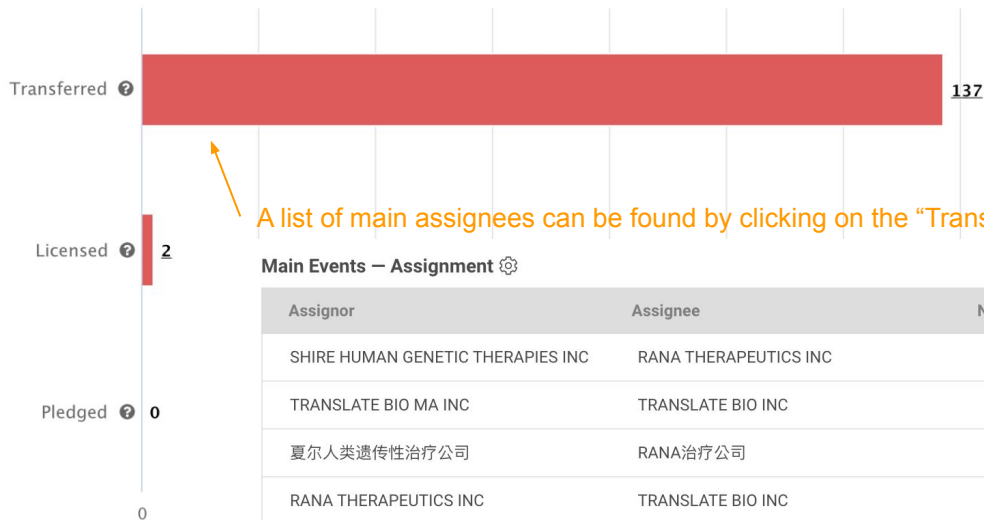
According to the patent records in the US and China, around 76.11% of its patents have been transferred. Among the 180 applications, 137 of them have been transferred.

## Transacted Patents



137 Applications

## 76.111 % COMPOSITION



A list of main assignees can be found by clicking on the "Transferred" bar.

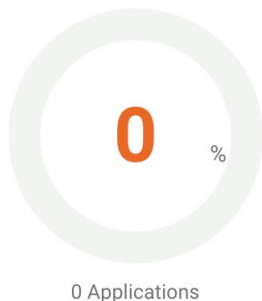
### Main Events — Assignment

Assignor	Assignee	Number of Transfers
SHIRE HUMAN GENETIC THERAPIES INC	RANA THERAPEUTICS INC	96
TRANSLATE BIO MA INC	TRANSLATE BIO INC	30
夏尔人类遗传性治疗公司	RANA治疗公司	6
RANA THERAPEUTICS INC	TRANSLATE BIO INC	6
COLEY PHARMACEUTICAL GMBH	RANA THERAPEUTICS INC	5

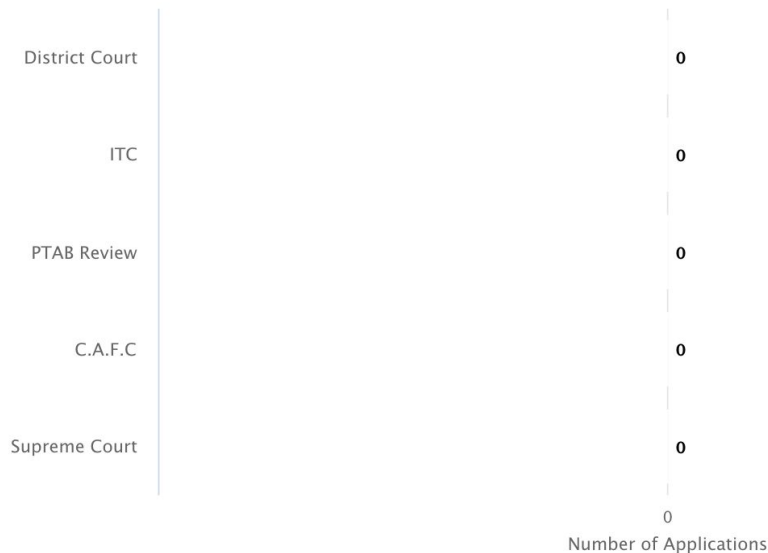
# Patent Litigation History

According to the patent data from the USPTO, none of Translate Bio's patents have been litigated.

## Litigated Patents



## 0% COMPOSITION



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# Quality and Value\* Evaluation

## Why Quality and Value?

Quality and Value are the two cornerstones of patent evaluation. By reflecting on a patent's true quality and value, we can evaluate patents with an objective viewpoint instead of relying on subjective guesswork—eventually giving a fair price to patents.

# Quality and Value\* Definition



Quality

Predicts the tendency for invalidation.

Describes whether a patent is eligible, novel, non-obvious, and described with clarity.



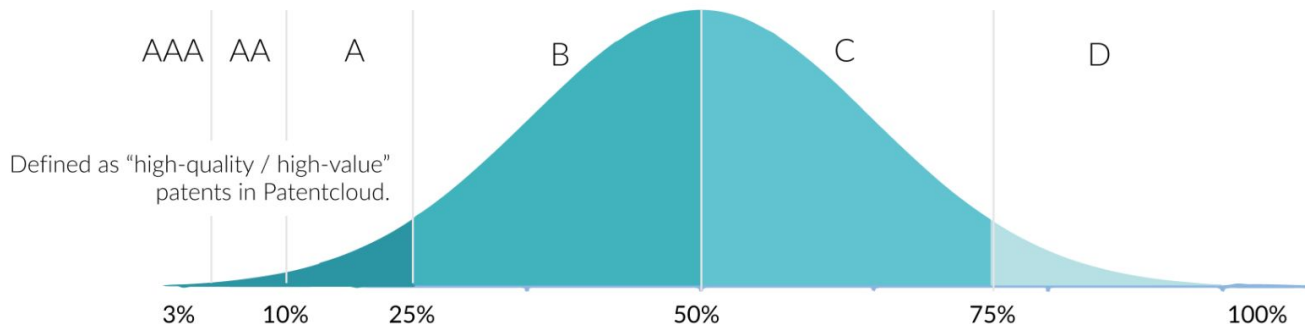
Value

Predicts the tendency for monetization.

Describes whether a patent has commercial viability—either realized from enforcement, transaction, or other commercial practices.

According to our proprietary models, each patent is ranked as per the quality and value dimensions and is categorized into one of the following six grades: AAA, AA, A, B, C, and D.

A patent with a quality score in the 97th percentile is graded as AAA.



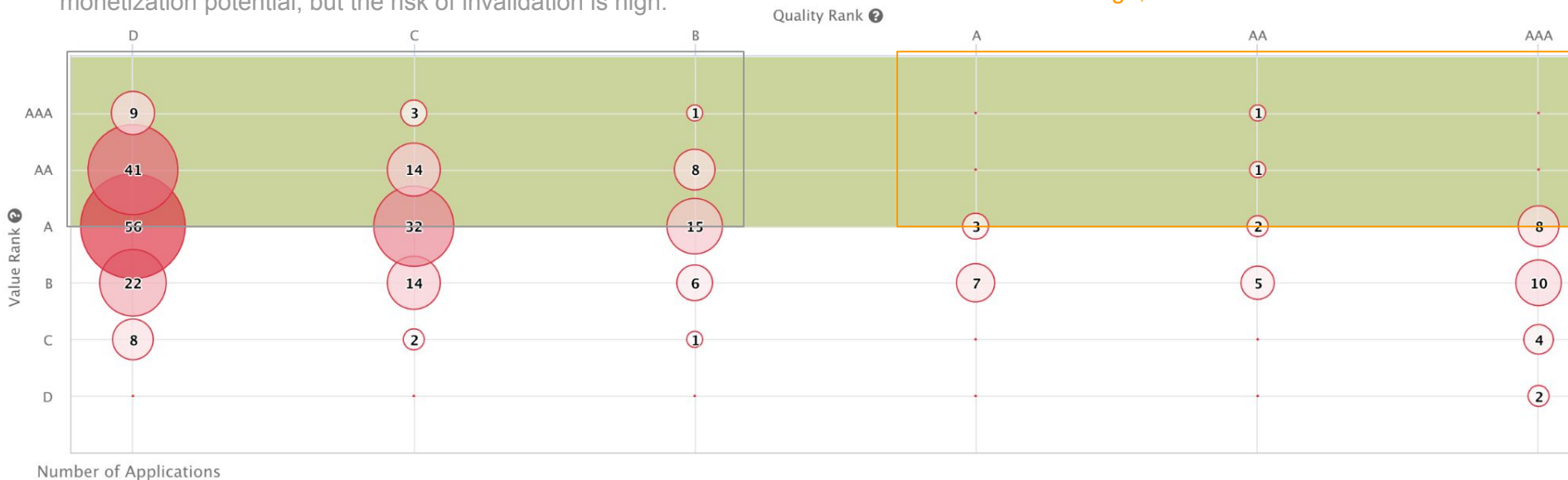
# Quality and Value Rankings - Quality and Value

Translate Bio has a large proportion of high-value patents, according to InQuartik's Quality and Value Rankings.

Of the **81** patent families, **275** patents are active or pending in major countries, of which **194** (71 %) are high-value patents. These high-value patents are more likely to generate value through commercialization, litigation, and transactions.

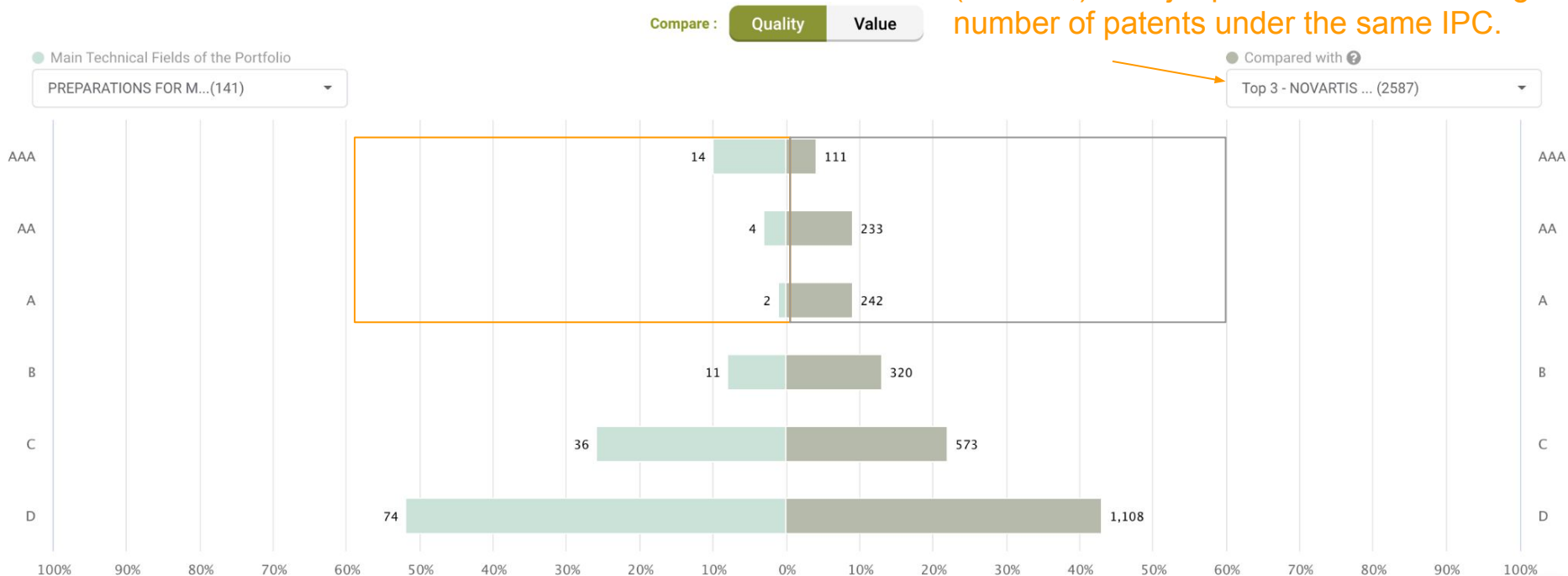
High-value, low-quality patents: They have good monetization potential, but the risk of invalidation is high.

High-quality, high-value patents: The potential for monetization is high, and the risk of invalidation is low.



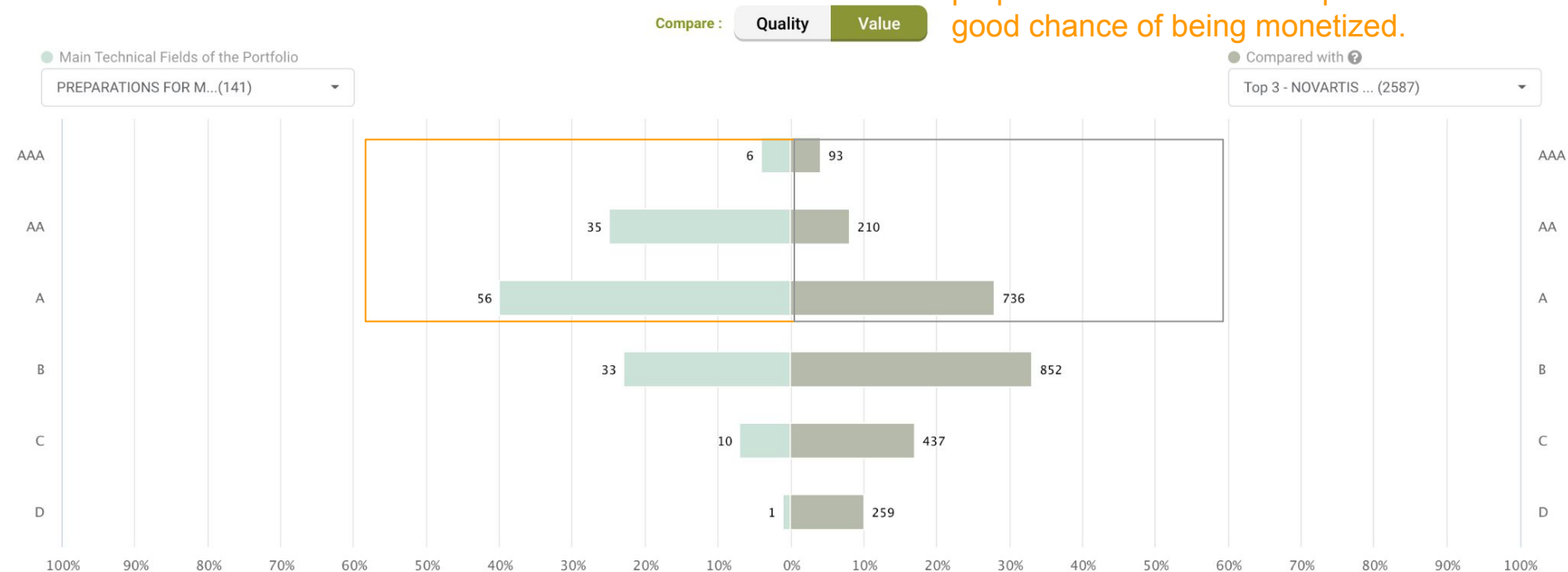
# Peer Comparison - Quality Rankings

For Translate Bio patents under the IPC "preparations for medical, dental, or toilet purposes," the proportion of high-quality patents is **14.18%**, lower than Novartis (**22.65%**,) a major pharma firm with a large number of patents under the same IPC.



# Peer Comparison - Value Rankings

The proportion of high-value patents in the same field is **68.79%**, much higher than that of Novartis (**40.16%**), suggesting a large proportion of Translate Bio patents has a good chance of being monetized.





# Quality and Value Highlights - Eligibility and Novelty Issues

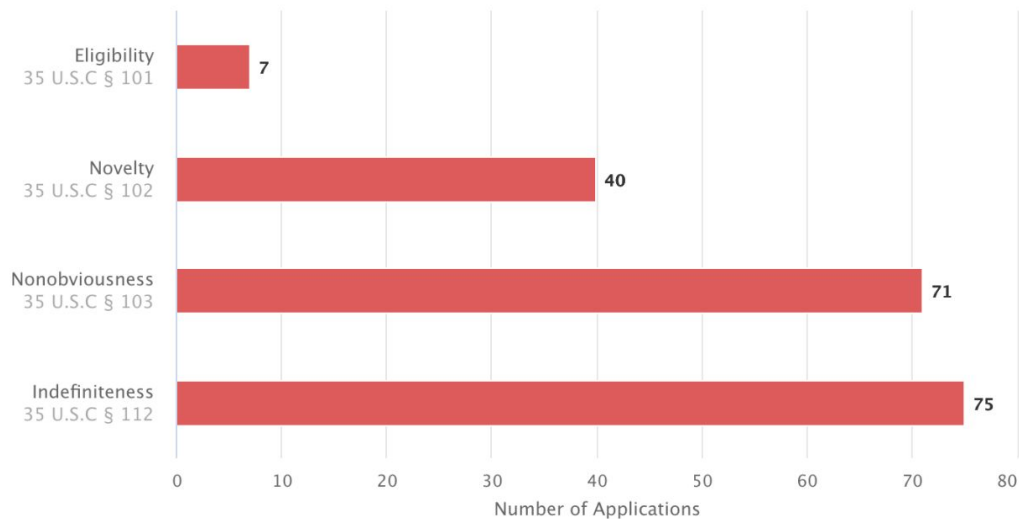
Around 64.75% of its patents in the US have been challenged in the prosecution or PTAB history — an indicator of patent quality issues for patent family members.

## Eligibility and Novelty Issues



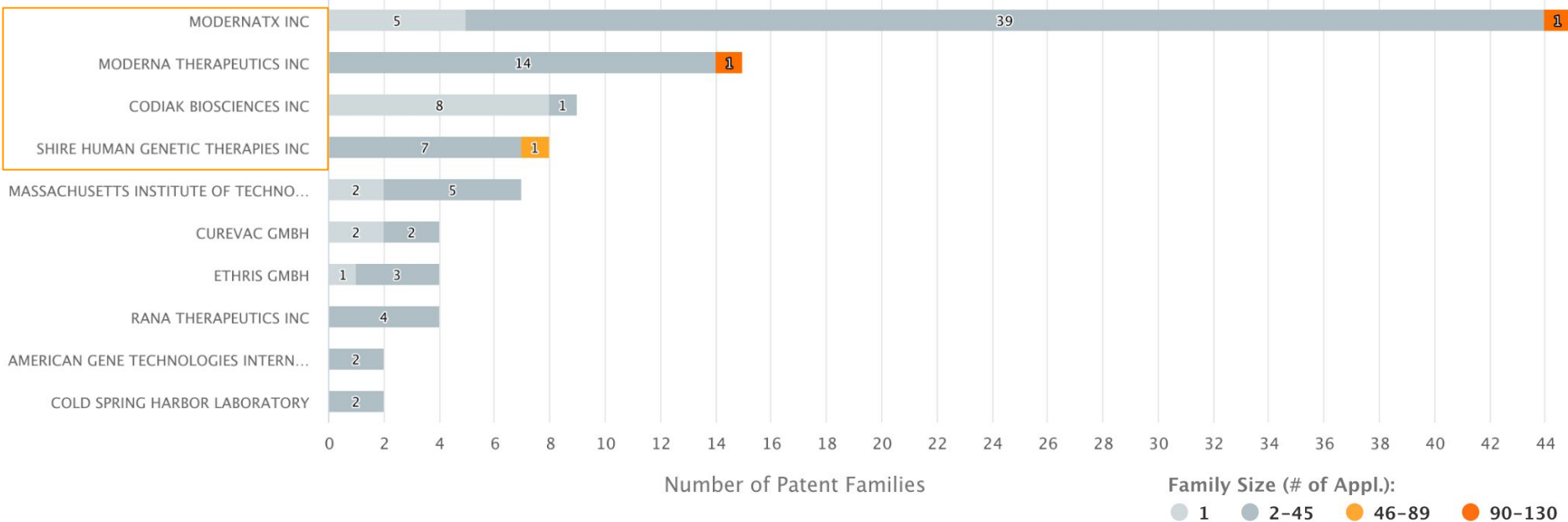
90 Applications

## 64.748 % COMPOSITION



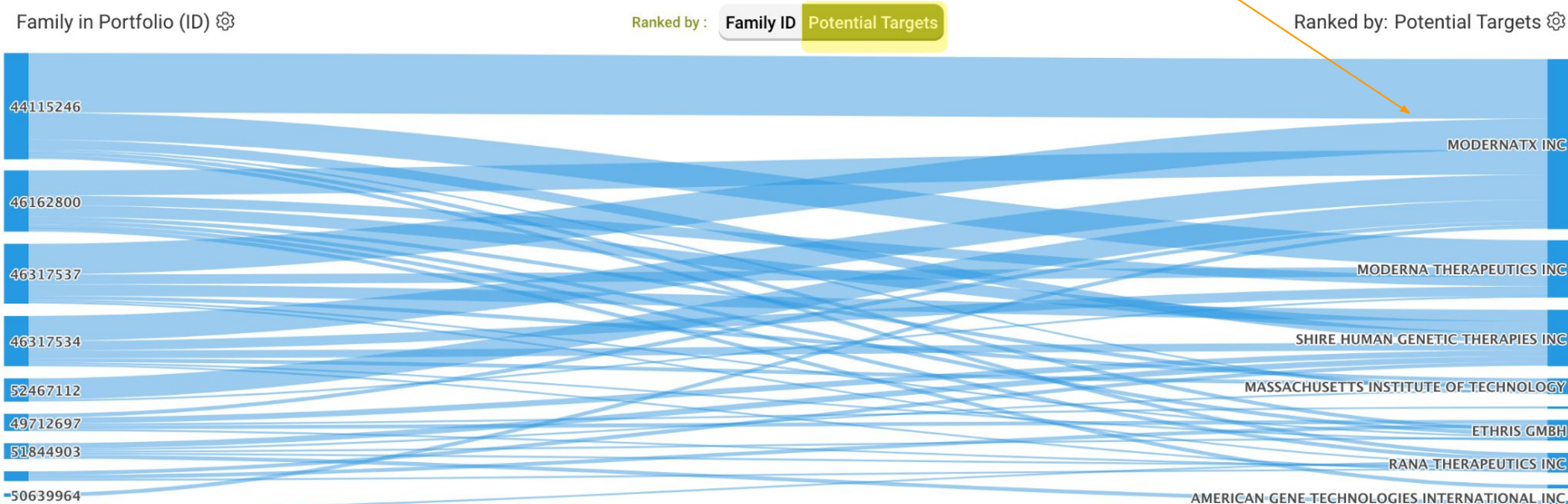
# Quality and Value Highlights - Potential Targets of the Portfolio

According to the patent citations, the potential targets for Translate Bio include Moderna's subsidiary ModernaTX, Moderna Inc. (formerly known as Moderna Therapeutics,) Codiak Biosciences, and Shire Human Genetic Therapies.



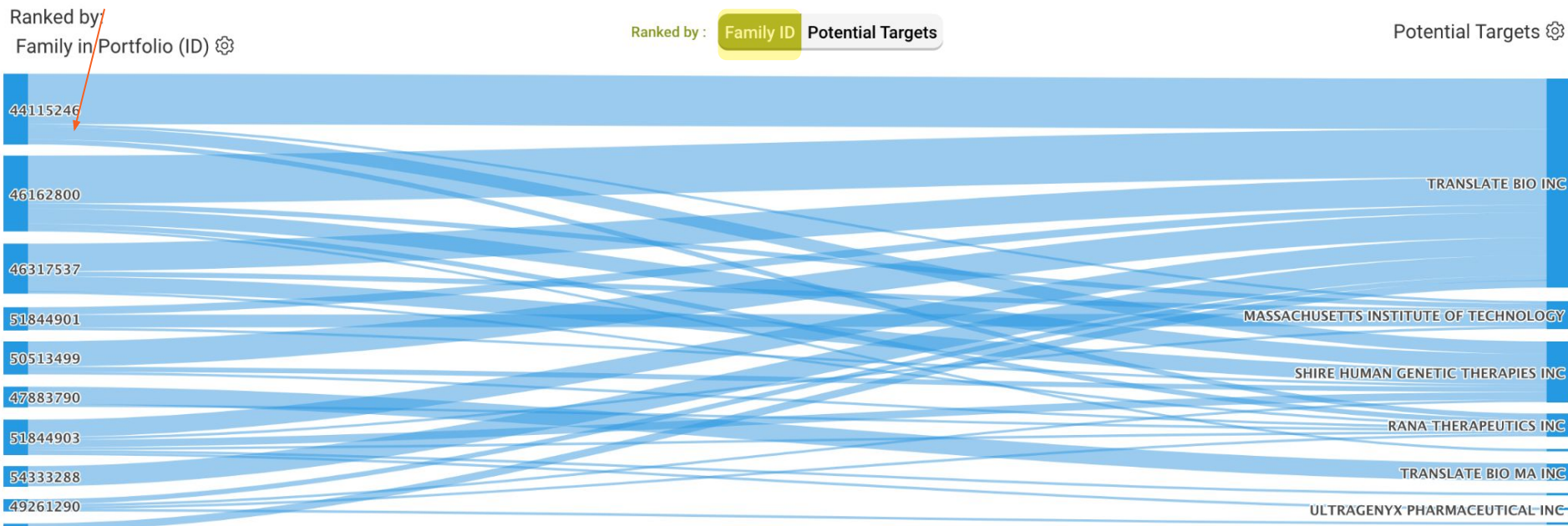
# Patents Against the Potential Targets

The major companies that cite this portfolio the most are potential targets for monetization.



# Patents Against the Potential Targets

The ten most heavily cited families — these patent families are ideal starting points for further investigation.




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# Download Report

## 1. Download Report



### Download Report

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**Coverage and Status**

- ☒ Global Coverage
- ☒ Remaining Life
- ☐ Pending Patents

**Technologies**

- ☒ Technical Fields
- ☒ Technology Timeline

**Owner/Inventor/Applicant**

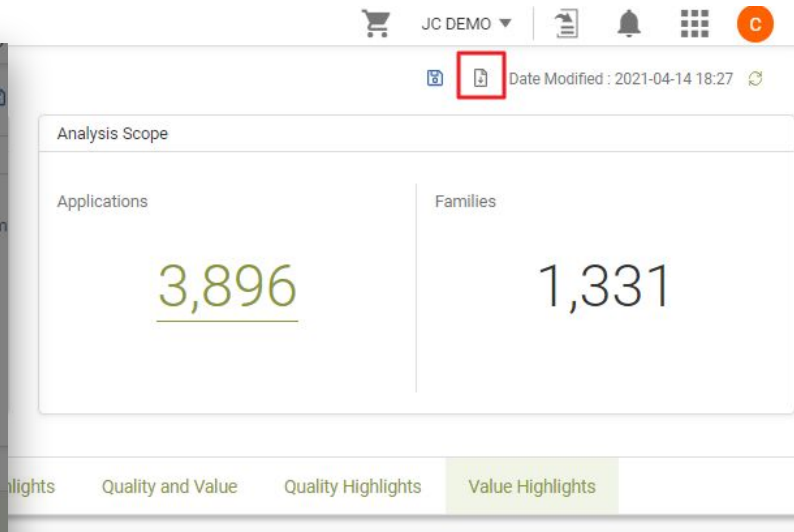
- ☒ Co-Ownerships and Co-Applicants

**Assignees and Inventors**

- ☐ Assignees
- ☐ Inventors

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# Matrix Analysis

Analyze like an expert!

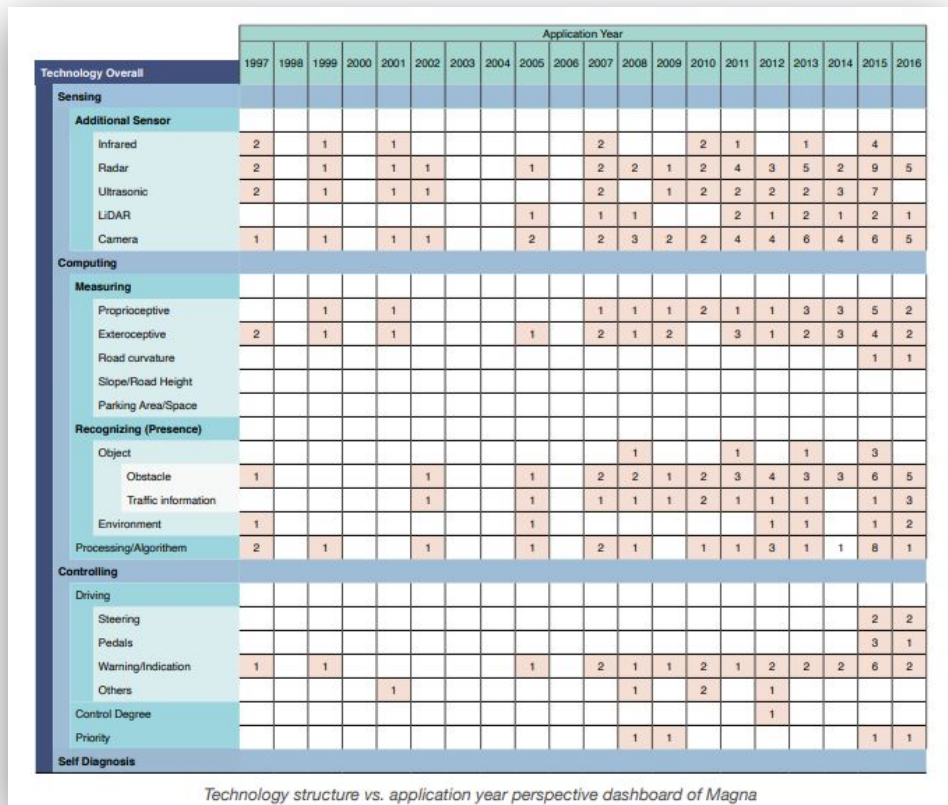
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Technology structure vs. application year perspective dashboard of Magna



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