

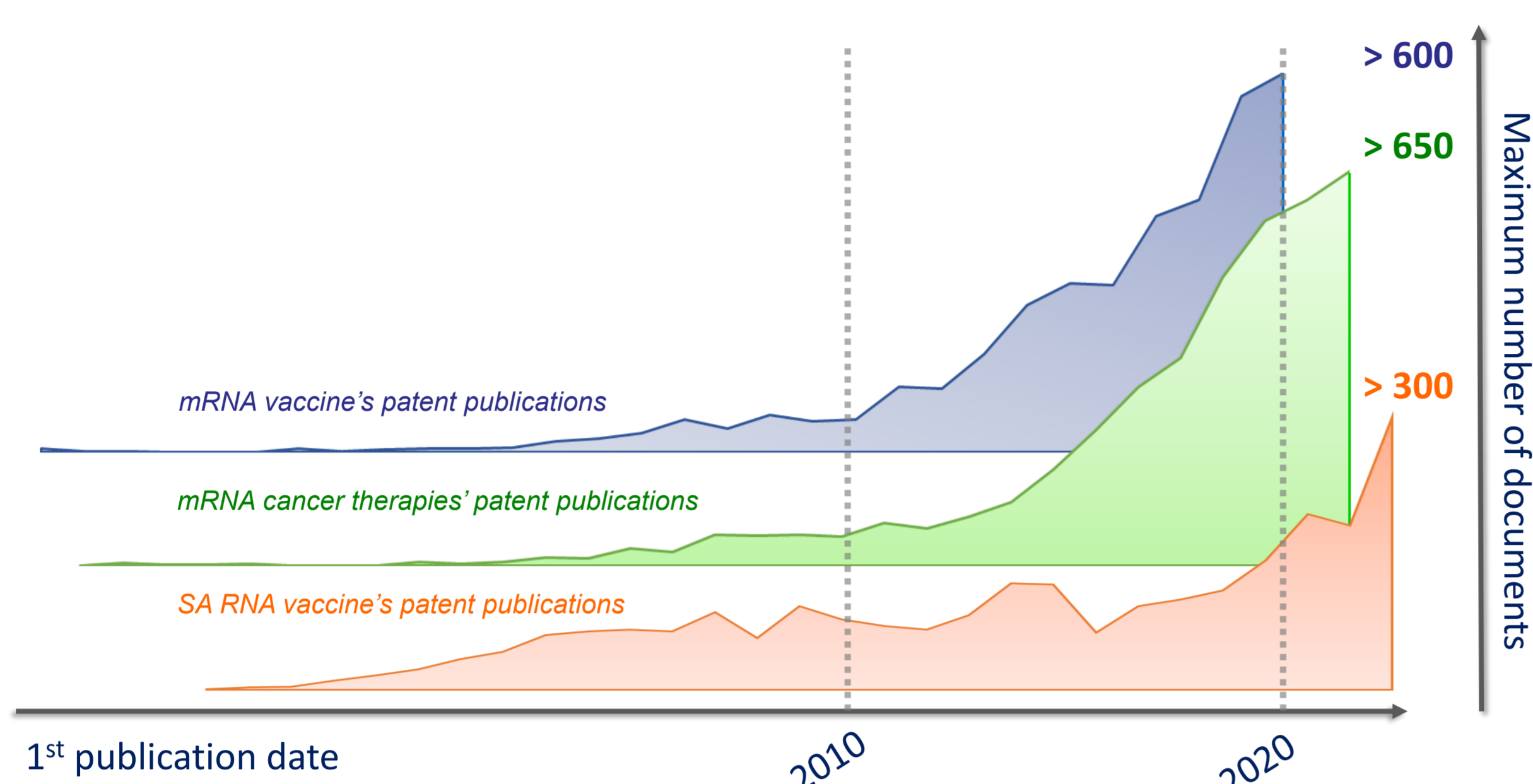
# mRNA COMPETITIVE LANDSCAPE MONITORING

## A PATENT PERSPECTIVE

### HIGHLY DYNAMIC INDUSTRY

A promising technology that has recently found its market due to covid crisis

Time evolution of patent publications related to mRNA from KnowMade's reports



With a significative increase in patent-filing activity, IP monitoring confirms that therapeutic mRNA innovation is still in an acceleration phase since 2010. Dynamics in patent filing is confirmed over the past three quarters.

Time evolution of IP dynamics

QUARTER	New patent families	New granted patents	New litigations
Q4 2022	125	32	8 (EP)
Q1 2023	160	23	1 (EP)
Q2 2023	203	19	4 (5US)

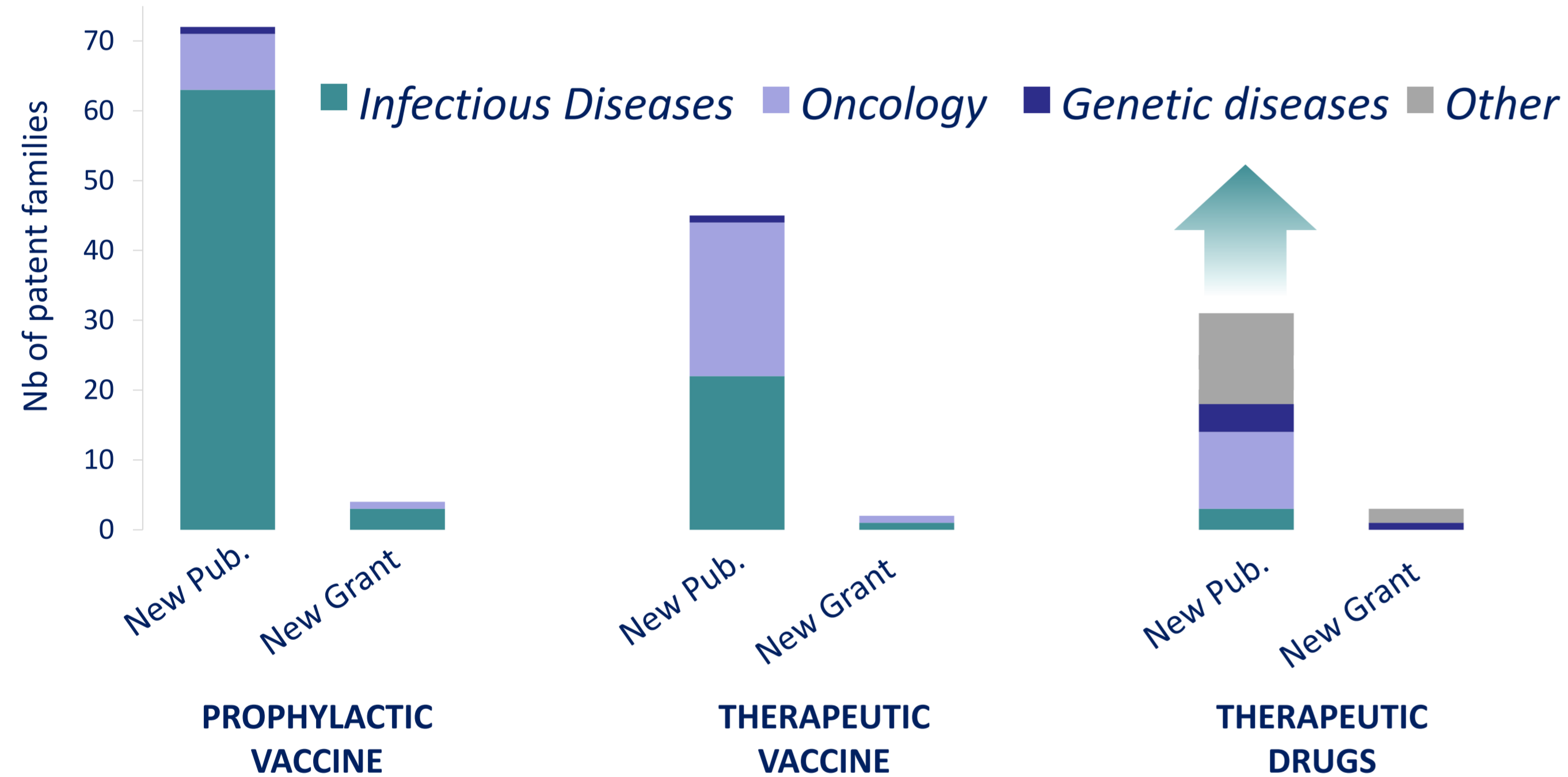
### NEW POCKET OF GROWTH ?

A three-way question : What? How ? Who ?

✓ **What?** Infectious Diseases & Oncology: the main applications

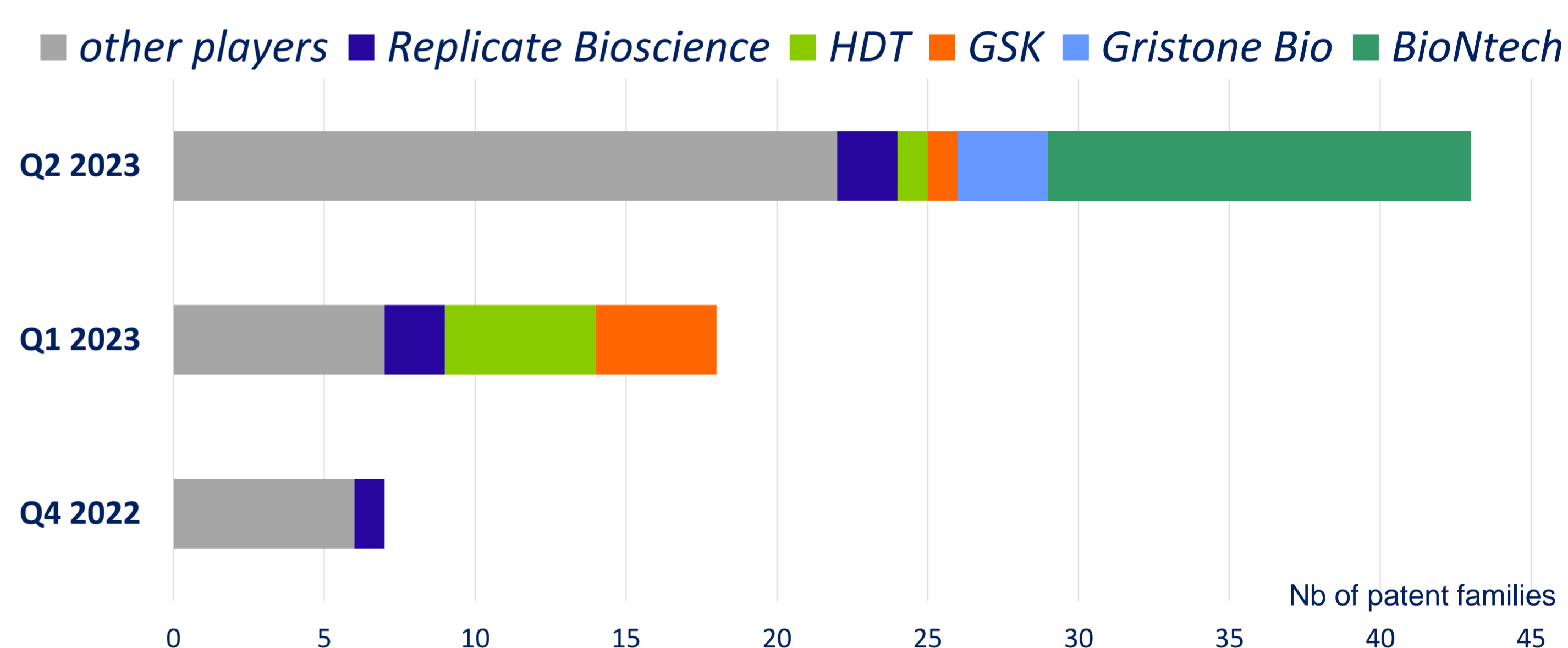
✓ **How?** Boost for Self-Amplifying mRNA design

Q2 2023 IP activity by type & application



With twice more new patent applications compare to Q4 2022, Infectious diseases and oncology are still the main applications for therapeutic mRNA in vaccination approaches. Nevertheless, increasing applications are represented in mRNA encoding therapeutic drugs (i.e., genetic diseases).

New patent applications related to Self-Amplifying RNA



Over the past quarters, new patent applications raised from 7 in Q4 2022 to 43 in Q2 2023 and relate to innovation in the RNA design itself but also on delivery systems efficient for SA mRNA.

✓ **Who?**

Main players

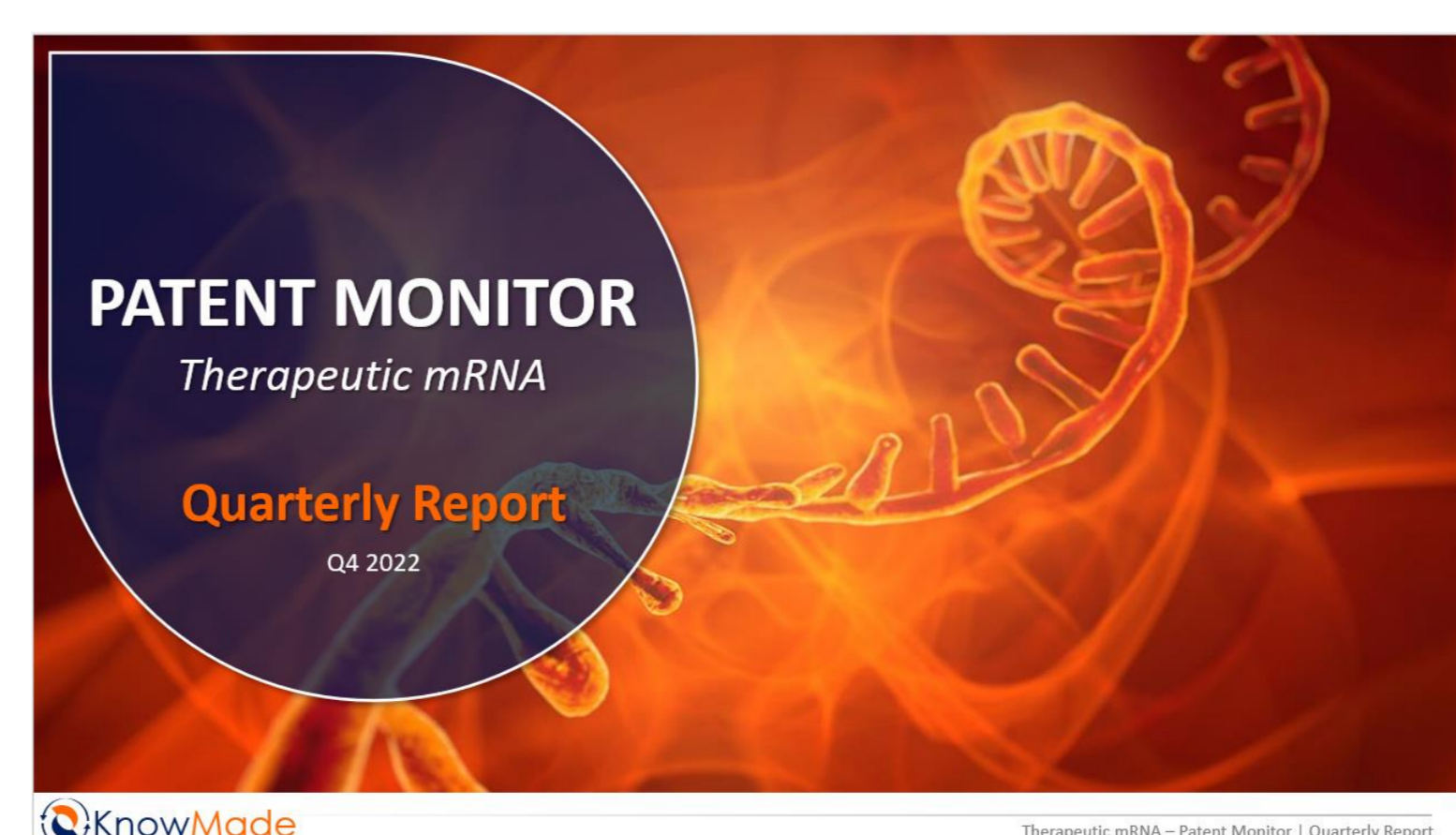
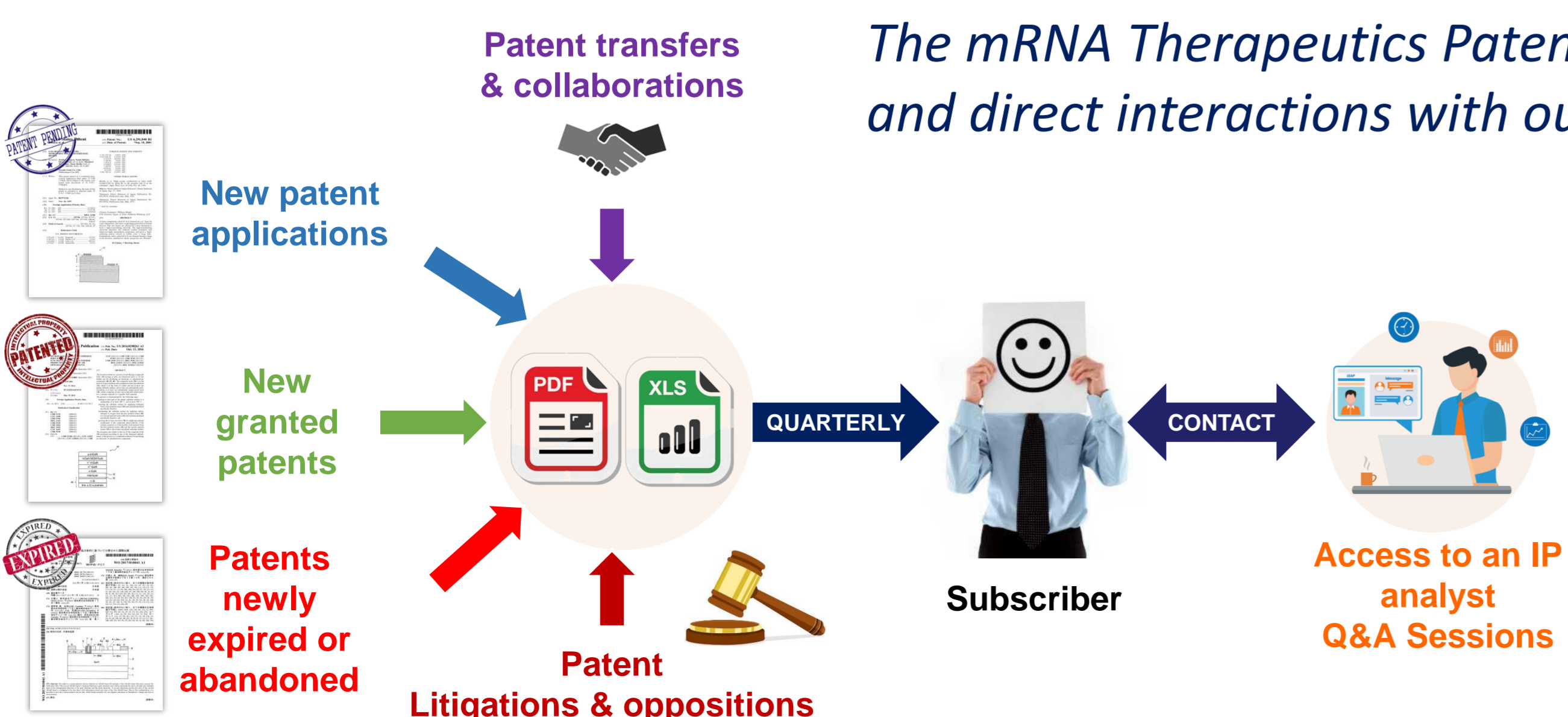
Newcomers



### MONITORING SERVICE

Get up-to-date data on Therapeutic mRNA patent activity

The mRNA Therapeutics Patent Monitoring Service allows you to take advantage of quarterly analysis reports and direct interactions with our analysts.



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