



# IMPROVING THE PHARMACOKINETIC PROPERTIES OF THERAPEUTIC ANTIBODIES

## #KEYWORDS

Therapeutic antibody  
Allotype  
FcRn Receptor  
Half-life

## CONTEXT

The market of therapeutic monoclonal antibodies (mAbs) is on the rise :

- An average of 4 new mAbs approved per year.
- Estimated 70 antibodies on the market in 2020.
- Worldwide sales should reach 125 Mds\$ by 2020.

Antibodies currently commercialized are from caucasian allotypes.

Modulation of pharmacocinetic properties participates in increasing efficiency of mAbs.

## TECHNOLOGY

The technology consists in developing mAbs with a Fc fragment of the Asian allotype. This results in an increased binding to FcRn receptor of endothelial cells compared to caucasian allotype-based mAbs. This receptor modulates the biodistribution and half-life of antibodies.

With the Asian allotype, the binding of mAbs to FcRn receptor is increased by 10% and the stability of this binding is improved by about 40%.

Consequently therapeutic antibodies developed with Asian allotype should display a longer half-life in both caucasian and Asian patients:

- Caucasian : better affinity for FcRn receptor than endogen antibodies.
- Asian : No unfavorable competition with endogen antibodies for binding FcRn.

## COMPETITIVE ADVANTAGE

- Increased half-life of therapeutic antibodies.
- Theoretically less immunogenic mAbs than artificial Fc mutants that are also developed to improve the pharmacokinetic properties of mAbs.
- Non extensive modification of mAb production processes.

## INTELLECTUAL PROPERTY

Priority filing in 2015, PCT extension in 2016.

## PARTNERSHIP

Licencing  
Co-development

## RESEARCH TEAM

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