# Request for proposal

# RFP

RFP2327_T02_PSI_02 Humanization

For the antibody humanization processes to convert non-human antibody sequences into humanized antibodies

Project "*Development of first-in-class antibody therapy for immunotherapy in metastatic melanoma, using Companion Diagnostics (CDx) patient stratification for treatment with the immune stimulating anti-CD270 antibody*",
financed by the Medical Research Agency (Poland)

**JJP Biologics**
Bobrowiecka 6,
00-728, Warsaw,
Poland

## Company and scientific background

JJP Biologics is a newly established Polish biotechnological company focused in the areas of autoimmune diseases and cancer.

Extensive analysis over many disease areas revealed in a couple of serious oncological diseases with unmet medical need, in which patients with high expression of checkpoint inhibitor receptor CD270 on their tumour, had a poor prognosis.

CD270 belongs to the TNF receptor superfamily and has three known ligands, of which CD160 and BTLA both deliver co-inhibitory signals, whereas LIGHT provides co-stimulatory signals to T cells. Moreover, the CD270-LIGHT action in the presence of CD160 or BTLA signals results in an immunosuppressive net outcome. High expression of the CD270 on tumors strongly correlates with poor survival and an immunosuppressive tumor micro-environment, which is consistent with the dominance of CD160/BTLA co-inhibitory regulatory signals.

JJP Biologics generated and selected a lead mouse-anti-human CD270 antibody that has the relevant functional activity to be employed in an oncology.

## The molecule and status

The desired Product is a stabilized humanized Immunoglobulin G4 (IgG4) monoclonal antibody binding CD270.

## Scope of the request

Antibody humanization processes convert non-human antibody sequences into humanized antibodies and are crucial for reducing their immunogenicity in humans. We are currently looking for a CRO which can deliver antibody humanization design services for our lead mouse-anti-human CD270 antibodies in the field of immune oncology. The offered humanization services should be royalty-free.

## Requirements for the service provider

The team that will perform the humanization must have > 15 years of experience in humanization of monoclonal antibodies as shown by:

1) 10 peer-reviewed publications on humanization of antibodies
2) Their contribution to humanization of any market antibody.
3) Any recent license agreement of a therapeutic antibody humanized using their technology

## Key assumptions of the study

- JJP Biologics will deliver the antibody sequences of the parent lead mouse antibody. The project is assumed to start in February and should be finalized before the end of June. Total duration around 4 months.

***Requested:***

- *In silico* design to obtain 3-5 humanized versions of VH and VL.
- For the sake of clarity two cost/time proposals are requested.

**Option 1):**

- Generation of 3 DNA expression vectors for antibody heavy chains and 3 DNA expression vectors for the antibody light chains
- Transient expression of all combinations (9 variants) and purify 1 mg of each variant
- Transient expression of the chimeric version and purify 1 mg
- Assess protein integrity of SDS-PAGE and confirm low (< 0.5 ng/mL) endotoxin content by LAL assay of the 10 purified variants (9 humanized versions + chimeric version); When endotoxin is > 0.5 ng/mL, endotoxin should be removed by an endotoxin removal column or by re-expressing and purification of the specific variant(s)

- Determine the binding affinity ($K_D$) to CD270 (e.g. by BLI) of the 9 humanized variants compared to the chimeric antibody

**Option 2):**

- Generation of 5 DNA expression vectors for antibody heavy chains and 5 DNA expression vectors for the antibody light chains
- Transient expression of all combinations (25 variants) and purify 1 mg of each variant
- Transient expression of the chimeric version and purify 1 mg
- Assess protein integrity of SDS-PAGE and confirm low (< 0.5 ng/mL) endotoxin content by LAL assay of the 26 purified variants (25 humanized versions + chimeric version); When endotoxin is > 0.5 ng/mL, endotoxin should be removed by an endotoxin removal column or by re-expressing and purification of the specific variant(s)
- Determine the binding affinity ($K_D$) to CD270 (e.g. by BLI) of the 25 humanized variants compared to the chimeric antibody

## Criteria for selecting Service Providers:

The decision to award any contract as a result of this RFP process will be based on Service Providers' responses. The decision-making process assumes the ability of each service provider to fulfil JJP Biologics needs and requirements as outlined within this RFP.

The selection will therefore be based on:

1) their cost of the offer, separately for each option

## Deadline for the bid submission: 07.02.2023 (Tuesday)

## Contact:

Questions regarding the inquiry and the offer should be sent to the following address: zapytaniabadania@jjpbiologics.com

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JJP Biologics reserves the right to terminate the Agreement at any stage of its implementation in case of indications that research work as part of the project is not advisable anymore.