Development of First-in-class Drug for Bradyarrhythmia (NTC-801F KACh Channel Inhibitor Phase II clinical trial)

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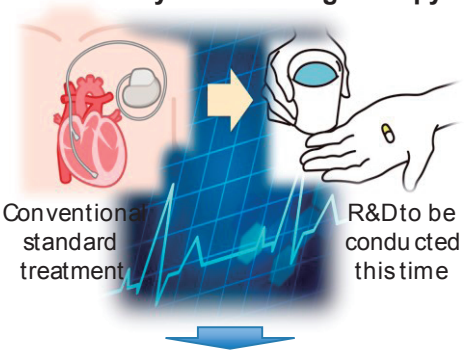
Project Outline

➢NTC-801F (KACh channel selective inhibitor) is a first-in-class therapeutic agent that safely increases heart rate. Since the effect of heart rate increase was confirmed in bradycardia caused by various factors, we aim to develop it as a treatment for bradycardia caused by a variety of factors.

➢There has never been anti-bradyarrhythmic drugs that safely increase heart rate. Although cardiac pacemaker is conventionally available, it is highly invasive. In addition, pacemaker implantation is subject to stringent indications, and not all bradycardia cases can benefit from it.

From Highly Invasive Device Therapy to Minimally Invasive Drug Therapy



Patient-first approach to treatment
Used as first-line therapy.
Can serve as a bridge to pacemaker implantation in advanced progression.

➢NTC-801F is extremely high selective for KACh channel, which has a highly specific expression in the cardiac conduction system. These features are presumed to safely increase the heart rate without cardiac toxicity such as prolonged QT interval or fatal arrhythmias.

Characteristics of NTC-801F

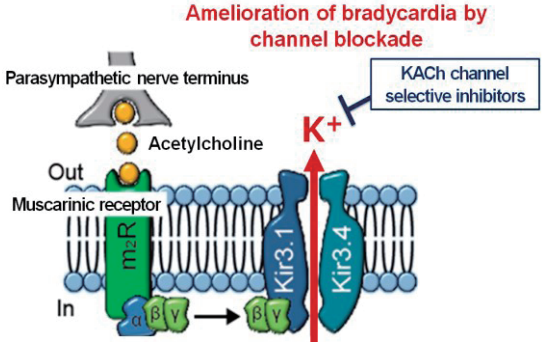
Sufficient evidence to suggest efficacy
- ✓ Confirmed clear molecular mechanism and suppression of IKACh current
- ✓ Obtained POC of increased heart rate in non-clinical studies

Evidence for low cardiotoxicity and safety
- ✓ Specific expression of the target molecule, KACh channel, in the cardiac conduction system
- ✓ High affinity of NTC-801F to KACh channels

Feasibility of conducting clinical trials
- ✓ Can be started from Phase II study (P-1 completed)
- ✓ Suppressive effect has been confirmed at dosage an administration that is well tolerated

Mechanism of KACh Channel Inhibitor

Development of KACh Channel Inhibitors as a First in Class Drug for Bradyarrhythmia



Progress toward goal	The phase II clinical trial will be completed in March 2022. Verify efficacy evaluation in subsequent phases and apply for pharmaceutical approval.

Target disease: Symptomatic bradyarrhythmia
Patent information: Substance patent, Application patent, etc.
Technology features: First-in-class drug, Oral drug, Minimally invasive treatment
Marketability and development issues: Potential for development of both general therapeutics and therapeutics for rare and intractable diseases
Desired corporate collaboration: Joint research, Licensing out, etc.