

**Development of a Novel Drug that Boosts the Rehabilitation Effects after Stroke  
Started a Phase 2 Clinical Trial in Japan**

**Tokyo, June 6, 2019** — FUJIFILM Toyama Chemical Co., Ltd. (President: Junji Okada ) has started a Phase 2 clinical trial of the new drug candidate compound “T-817MA” (generic name: edonerpic maleate) that has shown progress in boosting rehabilitation effects after a stroke. This study will confirm efficacy on the recovery of motor function by rehabilitation in the recovery phase after a stroke.\*1

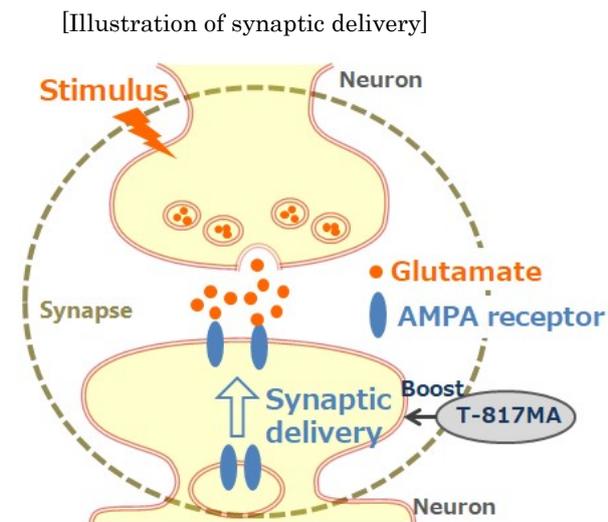
The alteration of neural circuits (neural plasticity) in response to external stimuli is related to the mechanism of motor function recovery after stroke. When the neural circuits are altered, AMPA receptors\*2, which are one of the receptors for glutamate, a neurotransmitter, increase in the synaptic\*3 membrane, and this delivery (right figure) of AMPA receptors to the synaptic membrane is widely accepted as a mechanism of neural plasticity. Increase of AMPA receptors in the postsynaptic membrane can potentially cause a postsynaptic response that is a central mechanism of information processing in the brain such as memory and learning.

Initial studies have shown that “T-817MA”, discovered and developed by FUJIFILM Toyama Chemical as a therapeutic drug candidate for the treatment of dementia promotes the synaptic delivery of AMPA receptors in response to external stimuli in mouse experiments through joint research with Yokohama City University, the National Institute of Advanced Industrial Science and Technology, and the National Institutes of Biomedical Innovation, Health, and Nutrition. Furthermore, in preclinical models (mouse and monkey) with brain damage, the administration of “T-817MA” in combination with rehabilitation showed to boost the recovery of motor function\*4.

This Phase 2 clinical trial will study the efficacy and safety of “T-817MA” on post-stroke patients with upper limb paralysis on one side of the body who are undergoing rehabilitation in the recovery phase after experiencing their first stroke (excluding subarachnoid hemorrhage\*5). In terms of efficacy, in addition to evaluation methods to assess motor function, objective measures such as brain imaging will be used to confirm the effects of “T-817MA” on acceleration of rehabilitation effect.

Annually, 300,000 people suffer from strokes in Japan, and 17 million people globally. Strokes can cause severe paralysis and compromise of patients’ quality of life. For these patients, there is a need for therapies for post-stroke recovery of motor function that will enhance the effectiveness of rehabilitation alongside steady physical training.

FUJIFILM Toyama Chemical contributes to the further advancement of medicine through the development, manufacture and sale of high value-added pharmaceutical products.



Administration of “T-817MA” facilitates AMPA receptor delivery to the synaptic membrane in response to external stimuli.

- \*1 Rehabilitation conducted after a stroke aiming for functional recovery. Ordinarily, it is started one to two months post-stroke, after acute phase treatment, and when the condition has started to stabilize.
- \*2 One of the receptors for glutamate (a major neurotransmitter for brain information processing). AMPA receptors form ion channels in the synaptic membrane. Ion-influx through the receptor induced by the binding of glutamate contributes to postsynaptic response. Increase of AMPA receptors in the postsynaptic membrane results in the potentiation of postsynaptic response that is a central mechanism of information processing in the brain such as memory and learning.
- \*3 A structure which conveys information from one neuron to the other neuron. Upon stimulation of one neuron, the information is mediated by neurotransmitter which is released from presynaptic terminal of the neuron and binds to its receptors in the other neuron, leading to the responses of postsynaptic neurons.
- \*4 Reference Abe et al. Science. 2018;360(6384):50-7.
- \*5 An illness where a bulge (aneurysm) on the surface of the blood vessels in the brain bursts. In addition to “subarachnoid hemorrhage”, strokes consist of “cerebral infarction” where the blood vessels in the brain become clogged, and “cerebral hemorrhage” where thin blood vessels in the brain tear, leading to hemorrhaging. Whereas “cerebral infarction” and “cerebral hemorrhage” are disorders inside the brain, “subarachnoid hemorrhage” is an illness where the brain is compressed due to bleeding on the surface of the brain.

< FUJIFILM Toyama Chemical Co., Ltd.>

FUJIFILM Toyama Chemical was launched by merging FUJIFILM RI Pharma Co., Ltd., a company that conducts the research, development, manufacture, and sales of radiopharmaceuticals, and TOYAMA CHEMICAL CO., LTD., a company that conducts the research, development, manufacture, and sales of small molecule pharmaceutical products. FUJIFILM Toyama Chemical dedicates efforts to developing innovative diagnostic and therapeutic radiopharmaceuticals and therapeutic drugs with unique mechanisms of action in the fields of “oncology”, “central nervous system diseases”, and “infectious diseases” where significant unmet medical needs still exist, with close collaboration with FUJIFILM Corporation which focuses on research of new medicines. It will also advance the development of new medicines utilizing drug delivery system (DDS) technologies that timely deliver the required amount of a drug to the specific body area. Also, by exploring synergy with in vitro diagnostic (IVD) devices and reagents owned by Fujifilm group companies, the company will expand its offering of comprehensive solutions from “diagnosis” to “treatment”.

For more information of FUJIFILM Toyama Chemical, please visit <http://fftc.fujifilm.co.jp/en/>

For inquiries on information in this media release, contact:	
FUJIFILM Toyama Chemical Co., Ltd.	
[Media Contact]	General Affairs Department FAX +81 3-5250-2606
[Other]	Project Division TEL +81 3-6427-5245
Website: <a href="http://fftc.fujifilm.co.jp/en/">http://fftc.fujifilm.co.jp/en/</a>	