

An Oral MAPKs Inhibitor for Cancer Therapy

Overview

Drug Name	IERK-002
Description	IERK-002 is an oral MAPK1/3 inhibitor in early clinical development for the treatment of advanced solid tumors with MAPK pathway mutations, as monotherapy and in combination with BRAF inhibitors.
Target	MAPK1; MAPK3
Drug Modality	Small Molecule
Indication	Solid Tumor
Product Category	New Molecular Entity
Mechanism of Action	Signal Transduction Modulators
Status	Phase I
Patent	Granted

Seeking Global Cooperation

Protheragen Inc. is actively seeking partnership for IERK-002. Potential collaboration can be strategic alliance, licensing, or marketing agreement.

We look forward to hearing from you.

Target

Mitogen-Activated Protein Kinase 1/3

MAP kinases, also known as extracellular signal-regulated kinases (ERKs), act as an integration point for multiple biochemical signals, and are involved in a wide variety of cellular processes such as proliferation, differentiation, transcription regulation and development. The activation of this kinase requires its phosphorylation by upstream kinases. Upon activation, this kinase translocates to the nucleus of the stimulated

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cells, where it phosphorylates nuclear targets.

One study suggested that MAPK1 acts as a transcriptional repressor independent of its kinase activity. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions.

Indication

Solid Tumor

Solid tumors are abnormal mass of tissue that usually does not contain cysts or liquid areas. Solid tumors may be benign or malignant. Different types of solid tumors are named for the type of cells that form them, such as breast cancer. Based on projections, cancer deaths will continue to rise with an estimated 11.4 million people dying from cancer in 2030.

The best strategy for fighting cancer is prevention to reduce cancer risk. Nevertheless, even if we were to apply all that we know about preventing cancer, one out of four cancers would still occur. Because of this, therapies that target malignancies after they have developed will continue to be important for some time to come. The most commonly used treatment modalities of cancer include some combination of surgery, radiation therapy, and chemotherapy. The best approach to treating cancer provides a balance between therapeutic effectiveness and minimization of treatment-associated side effects.

The global market for solid tumor treatment was estimated at \$121.3 billion in 2018 and is expected to reach \$424.6 billion by 2027, expanding at a CAGR of 15% from 2019 to 2027.

Mechanism of Action

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Signal Transduction Modulators

Molecular Mechanism	ERK1 Inhibitors
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	ERK2 Inhibitors
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Status

The Status of IERK-002

The international patent applications under the PCT have been granted.

