



To increase the value of RM technology through innovative science



To develop RM treatment through development of basic technology and clinical translation



researches



Reinforcing





(Open mind and action)

People-Centered

Networked (Excellent (Innovative and interactive RM platform)



Goals

To develop RM treatment through development of basic technology and clinical translation

Step 1 (2021–2023)

 Discover and develop basic technologies in RM

•Create a foundation for early advancement of new RM technologies to clinical trials

 Promote therapeutic application of core technologies for RM

Step 2 (2024–2026) •Enhance the quality of basic RM

 Accelerate early advancement of new RM technologies to clinical trials Reinforce global competitiveness of basic RM technologies

new RM technologies to clinical Promote commercialization of

Step 3 (2027–2030)

•Verify excellence in quality of basic RM technologies

• Facilitate early advancement of



*The estimated number of commercialized RM treatments after the phase 2 clinical trial



Establish a researcher-oriented R&D

•Create a research environment using faithful null results (FNR) and FNR database •Identify domestic R&D personnel, discover and nurture talents for cutting-edge regenerative medicine



Realize patient-centered R&D

•Establish ties with biobanks and T2B businesses (preclinical evaluation centers) to ensure clinical validity

•Operate a multi-directional communication system from the early stages of technological development to enhance the people's (patients, guardians, and general public) understanding of science



Promote market-centered R&D

- Support commercialization and economic feasibility from the initial stage of R&D
- •Help researchers surpass the death valley and provide practical support for entering a new market • Establish a cooperative system with regulatory authorities and advanced countries to secure safety and effectiveness



Expand world-leading R&D

- •Promote domestic core technologies by analyzing the gaps between the advanced global technologies
- •Establish a preemptive response system for global development trends and regulations • Establish a collaborative research system with outstanding global universities, research institutes and
- private enterprises and secure funding

Combating diseases and strengthening global competitiveness

by leading cutting-edge regenerative medicine (RM) technology



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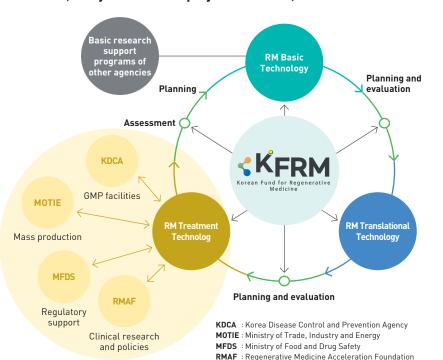


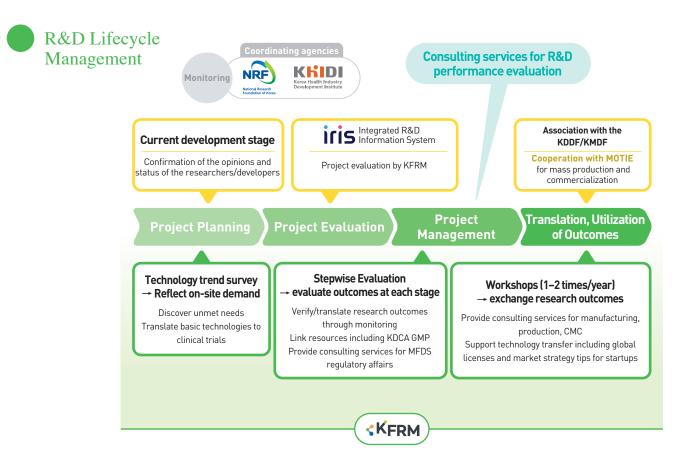
Roles

Coordinate roles and responsibilities for effective program operation and establish a cooperative system with the ministries and coordinating agencies

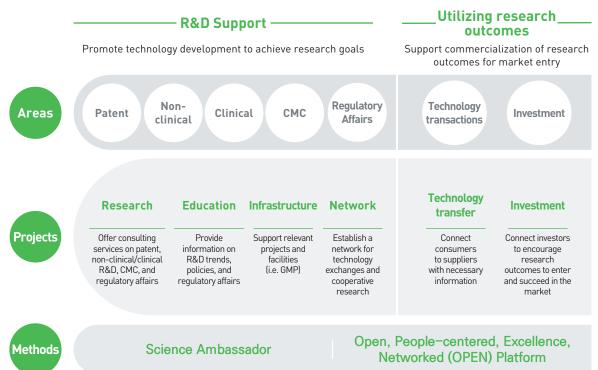


Support project planning, management, evaluation, and commercialization; establish research network and promote technology transfer; reinforce clinical translation; analyze and utilize project outcomes, etc.









[•] Science Ambassador: KFRM's R&D support system which provides on-site visits and expert consultations to researchers



Support the R&D life cycle of regenerative medicine, from basic research to clinical application

	Basic re	search	Preclinical res	search	GLP	Phase I	Phase II
Support Stage			Transla	tional research	Clinical (research/trial)		
Stage	TRL 1	TRL 2	TRL 3	TRL 4	TRL 5	TRL 6	TRL 7
	Technolog	gy discovery & d	evelopment				
			Tech	nology converg	gence		
Program			Tech	nology advance	ement		
		Right Shif	t of TDI			Clinicaltria	l for approval
		Right 3iiii	TOTTKE			Clinical	research*
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Program Details	Development of basic technology in regenerative medicine (TRL 1~3

Category	Details		
Future RM basic technology	Purpose: To develop promising source technologies including convergence of biocompatible materials, in vivo cell transformation, and biomaterial-cell complex • Duration: 3+2 years(2-staged) Target technologies: [1] Artificial cell tissues and xenogeneic organs development technology (2) Bio-reprogramming treatment technology (3) Biocompatible enhancement technology		
Next generation candidate treatment technology	Purpose: To develop basic RM technology including cell differentiation/maintenance/efficiency improvement technology, organoids, and cell activation technology Duration: 3+2 years(2-staged), 3 years Target technologies: [1] Diversification and advancement of the cell differentiation technology [2] Technology for securing multicellular therapies [3] Endogenous stem cell activation technology		

Detailed Project 2 Development of translational technology in regenerative medicine TRL 3~5

Category	Details
Next generation regenerative medicine applied technology (Technological convergence)	Purpose: To develop applied RM treatment and technology for verification purpose Duration: 3 years Target technologies: [1] Cell-based disease model technology [2] Cell-based drug development application technology [3] Organoid advancement and utilization technology
RM treatment technology (Technology advancement)	• Purpose: To accelerate disease-targeting non-clinical RM treatment and technology to clinical stage • Duration: 3+1 years[2-staged], 2 years • Target disorders: [1] Musculoskeletal disorders [2] Nervous system disorders [3] Circulatory and respiratory disorders [4] Endocrine system disorders [5] Digestive system disorders [6] Other incurable disorders

Detailed Project (3) Development of RM treatment and technology (TRI 6~7)

Category	Details		
Sponsor Initiated Trials (SIT)	Purpose: To complete phase 2 clinical trial of disease-targeting RM treatment through MFDS IND approve Duration: 3 years Target disorders: [1] Musculoskeletal disorders [2] Nervous system disorders [3] Circulatory and respiratory disorders [4] Endocrine system disorders [5] Digestive system disorders [6] Other incurable disorders		

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