

ヒト受精胚等へのゲノム編集技術等を用いる 研究に関する合同会議（再設置：第2回）	資料2
令和4年8月3日	

ミトコンドリア投与を行う臨床試験についての実態

- NIHClinicaltrial の調査

1. NIHClinicaltrial に投稿されているミトコンドリア投与を行っている臨床試験について調べてみた。10 を超える臨床試験が実施されている模様（表参照）、全てが調査できているわけではない
2. 臨床研究で投与されているミトコンドリアは自己、同種、同種カクテル製品がある
3. 少なくとも先進国で承認されているミトコンドリア製品はない
4. 対象疾患は様々であるが、国内ミトコンドリア学会である「日本ミトコンドリア学会」(<https://www.j-mit.org/>) でも検討が進められている
(ア)主として小児神経疾患の専門医が主なメンバーであることから、小児神経疾患についての項目を下記に記載
5. NIHClinicaltrial で対象とされている疾患等
(ア)小児ミトコンドリア移植対象疾患
 - ① Deoxyguanosine kinase deficiency
 - ② Mitochondrial complex I deficiency
 - ③ Childhood myocerebrohepatopathy spectrum
 - ④ Mitochondrial neurogastrointestinal encephalopathy disease
 - ⑤ Mitochondrial complex V deficiency
 - ⑥ Autism spectrum disorder
 - ⑦ Ataxia neuropathy spectrum
 - ⑧ Myoclonic epilepsy myopathy sensory ataxia
(イ)これら以外にヒト胚、湾岸戦争後遺症、なども挙げられている。

The KHENEREXT Study	Mitochondrial Diseases	Drug: Oral administration of 100 mg KH176 twice daily	Rigshospital et, University of Copenhagen
Does Clinical Treatment of Mitochondrial Dysfunction Impact Autism Spectrum Disorder (ASD)?	Autism Spectrum Disorders Mitochondrial Diseases	Drug: Mitochondrial Cocktail	St. Christopher's Hospital for Children Philadelphia, Pennsylvania, United States
Autologous Mitochondrial Transfer in ICSI to Improve Oocyte and Embryo Quality in IVF Patients. Pilot Study	Infertility	Other: Autologous mitochondria with ICSI Other: STANDARD ICSI PROCEDURE	IVI Valencia Valencia, Spain
Mitochondrial Cocktail for Gulf War Illness	Gulf War Syndrome Persian Gulf Syndrome	Dietary Supplement: Individualized mitochondrial cocktail Dietary Supplement: Placebo	UC San Diego La Jolla, California, United States

	Mitochondrial Disorders		
Mitochondria-targeted System Therapy Combined With Radiofrequency Ablation for Early-stage Non-small Cell Lung Cancer	Non Small Cell Lung Cancer	Other: Mitochondria -targeted System Therapy Combined With Radiofrequency Ablation Procedure: Surgery	Shanghai 10th People's Hospital Shanghai, Shanghai, China
The Effects of a Regenerative Mitochondrial Medication on Physiological Parameters in Case of Diabetes Mellitus Type II	Diabetes Mellitus, Type II	Dietary Supplement: Mitochondrial preparations	CFI Centrum für Integrative Medizin
		Dietary Supplement: Infusion therapy Device: Webermedical device Behavioral: Nutritional therapy	Speyer, Germany
	Cerebral Ischemia		Harborview Medical Center

Autologous Mitochondrial Transplant for Cerebral Ischemia		Other: Endovascular autologous mitochondria transplantation	Seattle, Washington, United States
Transplantation of Autologously Derived Mitochondria Following Ischemia	Extracorporeal Membrane Oxygenation Complication	Other: autologous mitochondria transplantation	Boston Children's Hospital Boston, Massachusetts, United States
Clinical Application of Autologous Mitochondria Transplantation for Improving Oocyte Quality.	Repetition Failure	Procedure: autologous mitochondria transplantation Combination Product: autologous mitochondria from bone marrow mesenchymal stem cells into oocyte as well as intracytoplasmic sperm injection (ICSI) Drug: intracytoplasmic sperm injection (ICSI)	
	Low Ovarian Reserve	Procedure: Injection of an autologous mitochondria to the oocyte.	Hadassah University Hospital

[Improving the Reproductive Outcome of](#)

[Poor Quality Ova by Injection of Autologous](#)

[Somatic Mitochondria](#)

Poor Quality Oocytes

Jerusalem,
Israel