CLAIMS

1. Use of urolithin A, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating a disease or condition selected from the group consisting of alcoholic liver disease, cirrhosis, nonalcoholic fatty liver disease, drug-induced liver injury, α1-antitrypsin deficiency, metabolic stress, cardiomyopathy, sarcopenia, muscle degenerative disease, Duchenne muscular dystrophy, ischemia/reperfusion injury, obesity, metabolic syndrome, type II diabetes mellitus, hyperlipidemia, osteoarthritis, Parkinson's disease, Ulrich myopathy, cardiovascular disease, atherosclerosis, a mitochondria-related disease associated with altered mitochondrial function or a reduced mitochondrial density; or disease related to a metabolic function, inflammation, neurodegenerative disease, Alzheimer's disease, macular degeneration, sensory hearing loss, infectious disease, myocardial infarction, cardiac bypass, skin inflammation, psoriasis, cardiac hypertrophy, left ventricular dilation, diminished cardiac output, decreased cardiac function, Danon disease, muscle disuse atrophy, skeletal muscular atrophy, amyotrophic lateral sclerosis (ALS), mood disorder, cardiac infarct, autoimmune disease, lupus erythematosus, polyQ disease, disease caused by misfolded protein aggregates, spinocerebellar ataxia, oculopharyngeal muscular dystrophy, prion diseases, fatal familial insomnia, dentatorubral pallidoluysian atrophy, frontal temporal dementia, progressive supranuclear palsy, X-linked spinobulbar muscular atrophy, neuronal intranuclear hyaline inclusion disease, minimal change disease, focal segmental glomerulosclerosis, diabetic nephropathy, membrane glomerulopathy, lupus nephritis, experimental glomerular disease, hypertension, chronic kidney disease, sickle cell anemia, thalassemia, severe muscle injury, intracellular skin infections, warts, an aging-related health condition, stroke, organ transplantation, frailty, impaired muscle strength associated with aging, skeletal muscle damage, and chronic obstructive pulmonary disorder.

2. The use of claim 1, wherein the disease or condition is Parkinson's disease.

3. The use of claim 1, wherein the disease or condition is alcoholic liver disease.

4. The use of claim 1, wherein the disease or condition is cirrhosis.

5. The use of claim 1, wherein the disease or condition is nonalcoholic fatty liver disease.

6. The use of claim 5, wherein the nonalcoholic fatty liver disease is nonalcoholic

steatohepatitis (NASH).

7. The use of claim 1, wherein the disease or condition is drug-induced liver injury.

8. The use of claim 1, wherein the disease or condition is α l-antitrypsin deficiency.

9. The use of claim 1, wherein the disease or condition is cardiomyopathy.

10. The use of claim 1, wherein the disease or condition is ischemia/reperfusion injury.

11. The use of claim 1, wherein the disease or condition is sarcopenia.

12. The use of claim 1, wherein the disease or condition is osteoarthritis.

13. The use of claim 1, wherein the disease or condition is cardiac deterioration with age.

14. The use of claim 1, wherein the disease or condition is stroke.

15. The use of claim 1, wherein the disease or condition is chronic kidney disease.

16. Use of urolithin A, or a pharmaceutically acceptable salt thereof, in the manufacture of a food product, nutraceutical, nutritional supplement or oral preparation for improving or increasing autophagy; improving activity during aging; improving balance or coordination; improving mitochondrial function; or improving weight management; improving stem cell function, improving outcome in acute pancreatitis, improving cardiac output, improving left ventricular diastolic function, improving blood pressure, improving immune response to intracellular bacteria, improving podocyte resistance to injury, improving muscle function, improving balance and coordination, improving muscle strength, improving muscle endurance, improving muscle recovery following exercise, improving endothelial cell dysfunction, improving angiogenesis, improving of tissue mineral density, improving outcome from intraocular inflammation or uveitis, improving pulmonary emphysema caused by α1-antrypsin, improving clearance of aggresomes that accumulate mutant cystic fibrosis transmembrane conductance regulator (CFTR) protein, improving outcome for human idiopathic pulmonary fibrosis, improving immune response to infection from pathogens, improving outcome for chronic obstructive pulmonary disease; improving the motor activity; or

increasing muscle mass and increasing bone strength; or

protecting against muscle damage or injury; protecting or maintaining cardiac muscle; or

reducing muscle atrophy, reducing age-related cataracts, reducing photoreceptor injury from uveitis, reducing glaucomatous neurodegeneration, reducing skin injury from excessive lipid oxidation commonly observed in aged and diseased skin, or reducing protein aggregates in cystic fibrosis; or

preventing cardiac deterioration with age; or protecting cells during cardiac procedures, such as angioplasty, bypass, or valve replacement; protecting against glucose intolerance or leptin resistance, protecting against muscle damage, protecting liver tissue, protecting against endothelial cell injury, or protecting from diabetic retinopathy; or

maintaining the amino acid pool during starvation; or clearing of intracellular microbes, clearing of protein aggregates, or clearing protein aggregates in pulmonary cells.

17. The use of claim 16, wherein the food product is a functional food.

18. The use of claim 16, wherein the food product or nutritional supplement is in the form of a food additive.

19. The use of claim 16, wherein the food product or nutritional supplement is in the form of a food ingredient.

20. The use of claim 16, wherein the food product or nutritional supplement is in the form of a dietary supplement.

~~21. Use of L-carnitine, or a pharmaceutically acceptable salt thereof, and urolithin A, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for increasing autophagy.~~

~~22. The use of claim 21, wherein the autophagy is mitophagy.~~

~~23. The use of claim 21 or 22, wherein the medicament is for oral administration.~~