Claims

1. Use of a composition comprising, as an active ingredient, a compound represented by general formula I or a salt, hydrate, or solvate thereof:

General formula I: S-(MS)p-(MS)q

wherein S is sialic acid; and (MS)p and (MS)q each are independently a monosaccharide residue in the manufacture of a medicament for preventing or treating a disease or symptom associated with a decrease in peroxisome proliferator-activated receptor coactivator 1-alpha (PGC-1α) expression,

wherein the disease or symptom associated with a decrease in PGC-1α expression comprises Alzheimer's disease (AD), amyotrophic lateral sclerosis (ALS, Lou Gehrig's disease), Duchenne muscular dystrophy, Parkinson's disease (PD), Huntington's disease (HD), Pick's disease, sporadic Alzheimer's disease, sporadic amyotrophic lateral sclerosis, sporadic Parkinson's disease, dyskinesia; and wherein the subacute neurodegenerative diseases comprise demyelinating diseases, subacute sclerosing encephalitis, senile dementia, dementia of endocrine or metabolic origin, frontal lobe dementia**,** diffuse Lewy Body disease, progressive supranuclear palsy (Steel-Richardson syndrome), multiple system atrophy, chronic epileptic conditions associated with neurodegeneration, cortical basal degeneration, ALS-Parkinson's-Dementia complex of Guam, synucleinopathies, motor neuron diseases including olivopontocerebellar degenerations, multiple sclerosis, primary lateral sclerosis, progressive multi-focal leukoencephalopathy, muscle loss (sarcopenia, cachexia), change of gluconeogenesis, cellulitis, gynecomastia, pseudogynecomastia, lipodystrophy, aging, photoaging, reepithelialization of injuries, dehydration of the skin, xerosis, keratinization disorders, calluses, hard skin, lichen planus, skin lesions associated with lupus, seborrheic dermatitis, senile dermatitis, dandruff, cradle cap, seborrhea, hyperseborrhea of acne, solar dermatitis, seborrheic keratosis, senile keratosis, actinic keratosis, photoinduced keratosis, follicular keratosis, acne, nevus, change in the function of fibroblasts, nodular fasciitis, scleroderma, Dupuytren's contracture, Sebaceous gland disorder, acne rosacea, polymorphic acne, comedones, polymorphous acne, rosacea, nodulocystic acne, conglobate acne, senile acne, ichthyosis, Darier's disease, keratoderma palmoplantaris, leukoplakia, mucosal lichen, cutaneous lichen, eczema, common warts, flat warts, epidermodysplasia verruciformis, oral papillomatosis, lupus erythematosus, bullous diseases, bullous pemphigoid, scleroderma, pigmentation disorders, vitiligo, alopecia areata, Lewy Body disease, neurofibrillary tangles, Rosenthal fibers, Mallory's hyaline, myasthenia gravis, Gilles de la Tourette syndrome, epilepsy, Creutzfeldt-Jakob disease, Leber's hereditary optic neuropathy, dystonia, or ataxia and retinitis pigmentosa.

2. The use of claim 1, wherein the compound is α-NeuNAc-(2→6)-β-D-Gal-(1→4)-D-Glc.

3. The use of claim 1, wherein the medicament is in a dosage form selected from the group consisting of solutions, suspensions, syrups, emulsions, liposomes, powders, granules, tablets, sustained-release preparations, and capsules.

4. The use of claim 3, wherein the medicament is to be administered orally, and is in a dosage form of a drug delivery system comprising liposomes or a sustained-release preparation.

5. The use of claim 3, wherein the medicament is to be administered parenterally, and is in a dosage form of a drug delivery system comprising liposomes and an ultrasound contrast agent or a sustained-release preparation.

6. The use of claim 1, wherein the salt is a pharmaceutically, cosmetically, or sitologically acceptable salt.

7. The use of claim 1, wherein the medicament is incorporated in a sitological, cosmetical, or pharmaceutical delivery system or sustained-release system comprises liposomes, mixed liposomes, oleosomes, niosomes, ethosomes, millicapsules, microcapsules, nanocapsules, nanostructured lipid media, sponges, cyclodextrins, vesicles, micelles, mixed micelles of surfactants, surfactant-phospholipid mixed micelles, millispheres, microspheres, nanospheres, lipospheres, microemulsions, nanoemulsions, miniparticles, milliparticles, microparticles, nanoparticles, or solid lipid nanoparticles.

8. The use of claim 7, wherein the medicament is to be applied topically, orally, or as a parenteral application.

9. The use of claim 8, wherein the topical application is performed by iontophoresis, ultrasonophoresis, electroporation, mechanical pressure, osmotic pressure gradient, occlusive cure, microinjection, needless injection by pressure, use of micro-electro-patches, use of face masks, or any combination thereof.

10. The use of claim 1, wherein the medicament increases PGC-1α expression.

11. The use of claim 1, wherein the medicament is to be administered to reduce, delay and/or prevent symptoms of aging and/or photoaging.

12. The use of claim 1, wherein the medicament is to be administered to reduce the content of triglycerides in adipose tissue.

13. The use of claim 12, wherein the adipose tissue is subcutaneous adipose tissue.

14. The use of claim 13, wherein the subcutaneous adipose tissue is subcutaneous adipose tissue of the femoral region, chest, a lower part of the neck, neckline, buttocks, face, lips, cheeks, eyelids and/or hands.

15. The use of claim 12, wherein the adipose tissue is any adipose tissue that may be formed in the body, including adipose tissue formed by fat embolism.

16. The use of any one of claims 6-15, wherein general formula I, a mixture thereof, and/or a sitologically, cosmetically, or pharmaceutically acceptable salt thereof is confirmed in a state of being adsorbed on a sitologically, cosmetically, or pharmaceutically acceptable solid organic polymer or solid mineral support, which is formed by talc, bentonite, silica, starch, and maltodextrin.

17. A composition comprising, as an active ingredient, a compound represented by general formula I or a salt, hydrate, or solvate thereof:

General formula I: S-(MS)p-(MS)q

wherein S is sialic acid; and (MS)p and (MS)q each are independently a monosaccharide residue for use in preventing or treating a disease or symptom associated with a decrease in peroxisome proliferator-activated receptor coactivator 1-alpha (PGC-1α) expression, the composition,

wherein the disease or symptom associated with a decrease in PGC-1α expression comprises Alzheimer's disease (AD), amyotrophic lateral sclerosis (ALS, Lou Gehrig's disease), Duchenne muscular dystrophy, Parkinson's disease (PD), Huntington's disease (HD), Pick's disease, sporadic Alzheimer's disease, sporadic amyotrophic lateral sclerosis, sporadic Parkinson's disease, , dyskinesia, and wherein the subacute neurodegenerative diseases comprise demyelinating diseases, subacute sclerosing encephalitis, senile dementia, dementia of endocrine or metabolic origin, frontal lobe dementia**,** diffuse Lewy Body disease, progressive supranuclear palsy (Steel-Richardson syndrome), multiple system atrophy, chronic epileptic conditions associated with neurodegeneration, cortical basal degeneration, ALS-Parkinson's-Dementia complex of Guam, motor neuron diseases including olivopontocerebellar degenerations, multiple sclerosis, primary lateral sclerosis, progressive multi-focal leukoencephalopathy, muscle loss (sarcopenia, cachexia), change of gluconeogenesis, cellulitis, gynecomastia, pseudogynecomastia, lipodystrophy, aging, photoaging, reepithelialization of injuries, dehydration of the skin, xerosis, keratinization disorders, calluses, hard skin, lichen planus, skin lesions associated with lupus, seborrheic dermatitis, senile dermatitis, dandruff, cradle cap, seborrhea, hyperseborrhea of acne, solar dermatitis, seborrheic keratosis, senile keratosis, actinic keratosis, photoinduced keratosis, follicular keratosis, acne, nevus,

change in the function of fibroblasts, nodular fasciitis, scleroderma, Dupuytren's contracture, Sebaceous gland disorder, acne rosacea, polymorphic acne, comedones, polymorphous acne, rosacea, nodulocystic acne, conglobate acne, senile acne, ichthyosis, Darier's disease, keratoderma palmoplantaris, leukoplakia, mucosal lichen, cutaneous lichen, eczema, common warts, flat warts, epidermodysplasia verruciformis, oral papillomatosis, lupus erythematosus, bullous diseases, bullous pemphigoid, scleroderma, pigmentation disorders, vitiligo, alopecia areata, Lewy Body disease, neurofibrillary tangles, Rosenthal fibers, Mallory's hyaline, myasthenia gravis, Gilles de la Tourette syndrome, epilepsy, Creutzfeldt-Jakob disease, Leber's hereditary optic neuropathy, dystonia, or ataxia and retinitis pigmentosa.