| 大項目(英)   | 小項目(英)  |
|--|---|
|  | 1) Glycoproteins  |
| 01: Glycobiology   | 2) Glycolipids 3) Proteoglycans   |
|  | 4) Lectins  |
|  | 5) Carbohydrate-related enzymes 6) Classification 01 in general   |
| 02: Lipid Biology  | 1) Lipid metabolome   |
|  | Sphingophospholipids     Glycerophospholipids   |
|  | 4) Bioactive lipids   |
|  | 5) Steroids, cholesterol and lipoproteins 6) Fatty acids, glycerides and neutral lipids   |
|  | 7) Classification 02 in general   |
|  | Structural biology, prediction of function and drug design     Protein modification   |
| 03: Proteins   | 3) Protein folding, quality control and chaperone   |
|  | 4) Proteolysis 5) Classification 03 in general  |
|  | Catalytic mechanism, regulatory mechanism and inhibitory mechanism  |
|  | Enzymes (Oxidoreductases and related enzymes)     Enzymes (Metalloenzymes and heme enzymes)   |
| 04: Enzymes and Metabolism   | 4) Enzymes (Hydrolytic enzymes)   |
|  | 5) Coenzymes, vitamins and biofactors 6) Metabolism and xenobiotic metabolism   |
|  | 7) Classification 04 in general   |
| 05: Redox and Energy Conversion                                    | ROS generation, oxidative stress and redox regulation     Don transport and bioenergetics   |
|  | 3) Electron transport chain   |
| 05: Redox and Energy Conversion                                    | 4) Mitochondria<br>5) Glycolysis  |
|  | Redox associated diseases   |
|  | 7) Classification 05 in general 1) Membrane transporter   |
| 06: Cell Structure and Function                                    | 2) Adhesion, motility, extracellular matrix and cytoskeleton  |
|  | Structure, function and biogenesis of organelles     Intracellular traffic systems (Vesicular transport etc.)   |
|  | 5) Classification 06 in general   |
| 07: Cellular Response  | Cell surface receptors, Ion channels  |
|  | Extracellular signal molecules (Hormone, Bioactive substance, etc.)     Biological interactions (Symbiotic and pathogenic microorganisms, insects, etc.)  |
|  | 4) Autophagy  |
|  | 5) Cell death (Apoptosis etc.) 6) Stress response   |
|  | 7) Ubiquitin, Proteasome  |
|  | 8) Cell adhesion, Metastasis, Homing 9) Environmental biology   |
|  | 10) Classification 07 in general  |
|  | Nuclear receptors     Protein kinases and phosphatases  |
|  | 3) G proteins   |
| 08: Signal Transduction  | Intracellular signaling molecules     Signal Regulation Molecules   |
| or orginal francadotton  | Growth factor and cytokine  |
|  | 7) TGF $\beta$ family<br>8) Wnt family  |
|  | 9) Classification 08 in general   |
| 09: Cell Cycle, Development  | Cell cycle, cell division and polarity     Early development, Morphogenesis and growth control  |
|  | 3) Stem cell and cell differentiation   |
|  | Classification 09 in general     Structure and function of chromosome and nucleus   |
| 10: Genetic Information and<br>Expression                          | DNA replication, recombination, mutation and repair   |
|  | 3) Transcription and its regulation   |
|  | Chromatin and epigenetics     RNA processing, transport, translation and degradation (including non-coding RNA)   |
|  | 6) Classification 10 in general   |
| 11: Frontier Sciences and<br>Technology                            | Ome research and analysis technology     Single molecule biochemistry, single cell biochemistry, imaging and biosensor  |
|  | 3) Systems biology  |
|  | Chronobiology, sleep, photoperiodism and rhythm     New bioactive substances  |
|  | 6) Food science   |
|  | Evolution and biodiversity     Genetic, nucleic acid, glycotechnology and cell engineering  |
|  | 9) Model organisms and technology   |
|  | 10) Phase separation 11) Classification 11 in general   |
|  | 1) Cancer   |
| 12: Biology of Diseases  | Aging     Bridocrinological and metabolic diseases  |
|  | 4) Hereditary diseases  |
|  | 5) Diseases in general 6) Life style-related diseases   |
|  | 7) Molecular diagnosis, laboratory medicine, etc.   |
|  | Classification 12 in general     Development of neural networks   |
|  | 2) Synaptic transmission and plasticity, receptors and channels and the sensory system  |
|  | 3) Substance metabolism and signal transduction   |
|  | Behavior, cognition and biological rhythms     Nervous and mental disorders   |
|  | 6) Classification 13 in general   |
|  |   |
|  | Cellular immunology and immune regulation     Host defense and infectious diseases  |
|  | Hollular immunology and immune regulation     Host defense and infectious diseases     Inflammation   |
| 14: Immunity and Infection   | Cellular immunology and immune regulation     Host defense and infectious diseases     Inflammation     Cytokine  |
| 14: Immunity and Infection   | 1) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immune sensors and signals   |
| 14: Immunity and Infection   | Cellular immunology and immune regulation     Host defense and infectious diseases     Inflammation     Cytokine     Immunology and Structural biology  |
| 14: Immunity and Infection   | 1) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immunology and structural biology 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general   |
| 14: Immunity and Infection   | 11) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immune sensors and signals 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells)   |
| 14: Immunity and Infection   | 1) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immunology and structural biology 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells) 2) Regenerative medicine (Tissue engineering and matrix engineering) 3) Biochemistry in neuronal degenerative diseases  |
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| 15: Medical Inovation  | 11) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immune sensors and signals 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells) 2) Regenerative medicine (Tissue engineering and matrix engineering) 3) Biochemistry in neuronal degenerative diseases 4) Biochemistry in chronic inflammation 5) Chemical biology, screening, and drug development 6) Nucleic acid-, protein- and antibody-engineering and drug development 7) Information science and drug development 8) New developments in model organisms 9) Classification 15 in general 1) Plant ome research 2) Plant organelle, cell and organogenesis  |
| 15: Medical Inovation  | 1) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immunology and Structural biology 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells) 2) Regenerative medicine (Tissue engineering and matrix engineering) 3) Biochemistry in neuronal degenerative diseases 4) Biochemistry in chronic inflammation 5) Chemical biology, screening, and drug development 6) Nucleic acid-, protein- and antibody-engineering and drug development 7) Information science and drug development 8) New developments in model organisms 9) Classification 15 in general 1) Plant one research 1) Plant one research 2) Plant organelle, cell and organogenesis 3) Environmental response and photosynthes 4) Plant-pathogen interactions  |
| 14: Immunity and Infection 15: Medical Inovation 16: Plant Biology | 11) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immune sensors and signals 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells) 2) Regenerative medicine (Tissue engineering and matrix engineering) 3) Biochemistry in neuronal degenerative diseases 4) Biochemistry in neuronal degenerative diseases 4) Biochemistry in chronic inflammation 5) Chemical biology, screening, and drug development 6) Nucleic acid-, protein- and antibody-engineering and drug development 7) Information science and drug development 8) New developments in model organisms 9) Classification 15 in general 1) Plant ome research 2) Plant organelle, cell and organogenesis 3) Environmental response and photosynthes 4) Plant-pathogen interactions 5) Plant intracellular signal reception and transduction |
| 15: Medical Inovation  | 1) Cellular immunology and immune regulation 2) Host defense and infectious diseases 3) Inflammation 4) Cytokine 5) Immunology and Structural biology 6) Immunology and Structural biology 7) Cancer and Immunity 8) Microbiome 9) Classification 14 in general 1) Regenerative medicine (Stem Cells and iPS cells) 2) Regenerative medicine (Tissue engineering and matrix engineering) 3) Biochemistry in neuronal degenerative diseases 4) Biochemistry in chronic inflammation 5) Chemical biology, screening, and drug development 6) Nucleic acid-, protein- and antibody-engineering and drug development 7) Information science and drug development 8) New developments in model organisms 9) Classification 15 in general 1) Plant one research 1) Plant one research 2) Plant organelle, cell and organogenesis 3) Environmental response and photosynthes 4) Plant-pathogen interactions  |