



MANOSÉ Health and Beauty Research Center

List of Service Items

| No. | Service | Test duration (days) |
|---------------------------------------|---|-------------------------|
| ● Chemical analysis | | |
| 1. | Qualitative and quantitative analysis of various compounds (sildenafil, xanthone, L-DOPA, anthocyanin, steroids, coixol, reduced glutathione, etc.) by HPLC and other methods | 30 |
| 2. | Quantitative analysis of anthraquinone by HPLC | 30 |
| 3. | Collagen content analysis by HPLC or spectrophotometer | 30 |
| 4. | SPF values analysis by spectrophotometer | 30 |
| 5. | Phytochemical analysis (alkaloids, anthraquinone, glycoside, xanthone, carotenoid, tannin, flavonoid, triterpene and steroid) | 15 |
| 6. | Total phenolic contents analysis by Folin-Ciocalteu phenol colorimetric assay | 30 |
| 7. | Total flavonoid contents analysis by aluminum chloride colorimetric assay | 30 |
| 8. | Total tannin contents analysis by Follin-Ciocalteu phenol colorimetric assay | 30 |
| 9. | Total saponin contents analysis by vanillin colorimetric assay | 30 |
| 10. | Total protein contents analysis by UV-spectrophotometry | 30 |
| 11. | Refractive index analysis | 30 |
| 12. | Loss on drying analysis | 30 |
| 13. | pH value measurement | 5 |
| 14. | Viscosity measurement | 15 |
| 15. | Melting point measurement | 15 |
| 16. | Shelf life estimation of a cosmetic product | 90 |
| ● In vitro biological activity | | |
| 17. | Anti-oxidative activities | |
| | - DPPH radical scavenging activity | 30 |
| | - Metal chelating activity by ferrous iron-ferrozine complex method | 30 |
| | - Lipid peroxidation inhibition activity by ferric iron-thiocyanate complex method | 30 |

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| 18. | Tyrosinase inhibition activity by the dopachrome method | 30 |
| 19. | Elastase inhibition activity | 30 |
| 20. | Collagenase inhibition activity | 30 |
| 21. | Hyaluronidase inhibition activity | 30 |
| 22. | Lipase inhibition activity | 30 |
| 23. | α -glucosidase inhibition activity | 30 |
| 24. | α -amylase inhibition activity | 30 |
| 25. | Acetylcholinesterase stimulation activity (Botox) | 30 |
| 26. | Phosphodiesterase type 5 inhibition activity | |
| | - % inhibition | 30 |
| | - IC ₅₀ | 30 |
| 27. | <i>In vitro</i> anti-inflammatory activity | 15-30 |
| 28. | Immunomodulatory activity by NBT method | 15-30 |
| 29. | SRB sulforhodamine B colorimetry assay | 30-60 |
| | - Anti-proliferative activity in cancer cell lines | 30-60 |
| | - Cytotoxicity (skin fibroblast, DU-145, B16F10) | 30-60 |
| | - Estrogenic effect in cell culture | 30-60 |
| | - Skin fibroblast proliferation activity | 30-60 |
| 30. | Wound healing activity in skin fibroblast | 40-60 |
| 31. | 5 α -reductase inhibition activity in DU-145 | 30-60 |
| 32. | Melanogenesis induction/inhibition activity in B16F10 | 45 |
| 33. | Tyrosinase inhibition activity in B16F10 | 45 |
| 34. | Matrix metalloprotease-2 induction/inhibition activity by zymography in skin fibroblast | 30-60 |
| 35. | Apoptosis induction activity by the AO/EB method in cancer cell lines | 30-60 |
| 36. | Apoptosis induction activity by the flow cytometry in cancer cell lines | 30-60 |
| 37. | Anti-cancer mechanism by the flow cytometry in cancer cell lines | 30-60 |
| 38. | Anti-aging activity by telomerase stimulation in Hela | 30-60 |
| 39. | Anti-inflammatory activity in RAW 264.7 | 30 |
| *test Nos. 30-38 should determine cytotoxicity test to select the concentration which gives no | | |

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| toxicity to cell. If the customers specify the concentration, it will not be guaranteed that the specified concentration is not toxic to cells. | | |
| 40. | Anti-microbial activity by the disc diffusion method | |
| | - <i>Staphylococcus aureus</i> , <i>Streptococcus mutans</i> , <i>Candida albican</i> , <i>Malassezia furfur</i> | 30 |
| | - <i>Propionibacterium acnes</i> / <i>Malassezia furfur</i> | 30 |
| 41. | Determination of minimum inhibitory concentrations (MIC) by the broth dilution | 30 |
| 42. | Determination of minimum bactericidal concentrations (MBC) by the broth dilution | 30 |
| 43. | Determination of microbial contamination in extracts and products such as cosmetics by the plate count method | 30 |
| ● In vivo biological activity test | | |
| 44. | Anti-inflammatory activity by ear edema evaluation in rats | 30 |
| 45. | Hypoglycemic effect on the induced diabetic rats | 30-60 |
| 46. | Anti-hypertension by tail cuff method in rats | 30-60 |
| 47. | Relaxative effects from endorphin or epinephrine or cortisol excretion in rats | 90 |
| 48. | Anti-cancer activity by human tumor xenograft in nude mice | 90 |
| 49. | Anti-impotence activity in rats | 90 |
| 50. | Estrogenic effect in rats | 30-60 |
| 51. | Anti-lipidemic activity in rats | 60 |
| 52. | Acute toxicity in rats | 60 |
| 53. | Sub-acute toxicity in rats | 90 |
| 54. | Sub-chronic toxicity in rats | 150 |
| ● Tests in human volunteers (10 volunteers) | | |
| 55. | Water resistance of the sunscreen product | 30 |
| 56. | Measurement of oils on skin | 45-60 |
| 57. | Skin irritation evaluation | 30 |
| 58. | Skin whitening effect | 60 |
| 59. | Skin hydration induction activity | 60 |

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| 60. | Skin elasticity induction activity | 60 |
| 61. | Skin greasiness reduction activity | 60 |
| 62. | Transepidermal water loss (TEWL) reduction activity | 60 |
| 63. | Skin wrinkle reduction activity (visioscan) | 60 |
| ● Other Tests and Analysis Services | | |
| 64. | Drying of the extract by a rotary evaporator | 7 |
| 65. | Drying of the extract by a freeze dryer | 15 |
| 66. | Skin penetration by Franz diffusion cell | 60 |

Updated : July 17, 2018