Specification : Mulberry Leaf Extract/ สารสกัดใบหม่อน

(Manose RM-0063)

(Application : An active ingredient for whitening and anti-aging cosmetics/ สารสำคัญในผลิตภัณฑ์เครื่องสำอางช่วยให้ผิวขาวและชะลอวัย)

1.	**Name of the raw material**	:	Mulberry Leaf Extract
2.	**Active components**	:	Flavonoids, phenolic acid, alkaloids and coumarins[1]
3.	**Common and scientific name/ Family of the plant**	:	Mulberry (*Morus alba* L.) / MORACEAE
4.	**Physical appearance**	:	Brownish semi-solid with specific herbal odor
5.	**pH**	:	5
6.	**Standardization**	:	HPLC fingerprint using anthocyanin as a marker[2]
7.	**Solubility**	:	soluble in ethanol
8.	**Microbial contamination**	:	No pathogenic microorganism with less than 1,000 cfu/g of bacteria, yeast and fungi which is conformed to the Thai FDA regulation
9.	**Biological activities**	:	- Antioxidative activity by DPPH radical scavenging with the SC_{50} of 0.92 ± 0.07 mg/ml (SC_{50} of vitamin C = 0.06 ± 0.03 mg/ml) - Antioxidative activity by metal chelating with the MC_{50} of more than 1000 mg/ml (MC_{50} of EDTA = 0.50 ± 0.00 mg/ml) - Antioxidative activity by lipid peroxidation inhibition with the IPC_{50} of 0.07 ± 0.01 mg/ml (IPC_{50} of vitamin E = 0.14 ± 0.01 mg/ml) -

- Tyrosinase inhibition activity with the IC_{50} of 0.02 ± 0.01 mg/ml (IC_{50} of kojic acid = 0.05 ± 0.01 mg/ml)

10.	**Animal/ human performance test**	:	-
11.	**Safety**	:	No skin irritation in human volunteers
12.	**Pharmaceutical, food supplement or cosmetic applications**	:	Whitening and anti-aging cosmetics
13.	**Recommended concentrations in the product**	:	0.1 - 5% w/w
14.	**Storage**	:	Keep in tight and light protection container at room temperature
15.	**Precautions**	:	None
16.	**Cost per kg**	:	Please request

References

1. Chen C, Razali UHM, Saikim FH, Mahyudin A, Noor NQLM. (2021) *Morus alba* L. plant : Bioactive compound and potential as a functional food ingredient. **Foods**. 2021, 10: 689

2. Kim L. and Lee J. (2020) Variation in anthocyanin profiles and antrioxidant activity of 12 genotypes of Mulberry (*Morus* spp.) fruits and their changes during processing. **Antioxidants (Basel).** 9(3): 242