[CLAIMS]

[Claim 1]

A method for evaluating the skin sensitizing property and/or the pyrogenic property of a test substance, comprising measuring an amount of IL-6 produced in a culture medium by culturing human immortalized myeloid cells in the presence of the test substance.

[Claim 2]

The method according to claim 1, further comprising measuring an amount of IL-8 produced in a culture medium by culturing human immortalized myeloid cells in the presence of the test substance.

[Claim 3]

The method according to claim 1 or 2, wherein the human immortalized myeloid cell is a human immortalized monocyte or a dendritic cell prepared from the human immortalized monocyte.

[Claim 4]

The method according to any one of claims 1 to 3, wherein a concentration of the test substance during the culture of the human immortalized myeloid cells includes at least 3 kinds of concentration between higher than 0 μg/mL and not more than 1000 μg/mL.

[Claim 5]

The method according to any one of claims 1 to 4, wherein a time of the culture is at least one kind selected from 3 hr to 48 hr.

The method according to any one of claims 1 to 5, wherein the production amount is measured by an immunological measurement method.

[Claim 7]

The method according to claim 6, wherein the immunological measurement method is ELISA.

[Claim 8]

The method according to any one of claims 1 to 7, further comprising determining that the test substance has skin sensitizing property and/or pyrogenic property when the production amount is not less than 1.5 times the production amount of a negative

control.

[Claim 9]

A method for detecting a skin sensitizer and/or a pyrogen in a sample, comprising measuring an amount of IL-6 produced in a culture medium by culturing human immortalized myeloid cells in the presence of the sample.

[Claim 10]

The method according to claim 9, further comprising measuring an amount of IL-8 produced in a culture medium by culturing human immortalized myeloid cells in the presence of the sample.

[Claim 11]

The method according to claim 9 or 10, wherein the human immortalized myeloid cell is a human immortalized monocyte or a dendritic cell prepared from the human immortalized monocyte.

[Claim 12]

The method according to any one of claims 9 to 11, wherein a concentration of the sample during the culture of the human immortalized myeloid cells includes at least 3 kinds of concentrations.

[Claim 13]

The method according to any one of claims 9 to 12, wherein time of the culture is at least one kind selected from 3 hr to 48 hr.

The method according to any one of claims 9 to 13, wherein the production amount is measured by an immunological measurement method.

[Claim 15]

The method according to claim 14, wherein the immunological measurement method is ELISA.

[Claim 16]

The method according to any one of claims 9 to 15, further comprising determining that the sample comprises a skin sensitizer and/or a pyrogen when the production amount increased than the production amount of a negative control.

[Claim 17]

The method according to any one of claims 9 to 16, wherein the skin sensitizer and/or pyrogen are/is lipopolysaccharide (LPS) and/or Staphylococcus aureus Cowan 1 (SAC).

[Claim 18]

A method for evaluating an action of a sample on a function of immune cells, comprising measuring an amount of cytokine produced in a culture medium by culturing human immortalized myeloid cells in the presence of the sample, wherein the cytokine is IL-6.

[Claim 19]

The method according to claim 18, wherein the human immortalized myeloid cell is a human immortalized monocyte or a dendritic cell prepared from the human immortalized monocyte.

[Claim 20]

The method according to claim 18 or 19, further comprising measuring an amount of cytokine produced in a culture medium by culturing human immortalized myeloid cells in the presence of the sample, wherein the cytokine is selected from the group consisting of IL-1a, IL-1b, IL-1ra, IL-2, IL-2Ra, IL-3, IL-4, IL-5, IL-7, IL-8, IL-9, IL-10, IL-12(p70), IL-12(p40), IL-13, IL-15, IL-16, IL-17A, IL-18, CTACK, Eotaxin, FGF basic, G-CSF, GM-CSF, GRO-α, HGF, IFN-α2, IFN-γ, IP-10, LIF, MCP-1(MCAF), MCP-3, M-CSF, MIF, MIG, MIP-1α, MIP-1β, β-NGF, PDGF-BB, RANTES, SCF, SCGF-β, SDF-1a, TNF-α, TNF-β, TRAIL, and VEGF-A.

[Claim 21]

The method according to any one of claims 18 to 20, wherein the action on the function of immune cells is selected from an action to increase cytokine production from immune cells, an action to decrease cytokine production from immune cells, an inflammation-inducing action by immune cells, an inflammation-suppressing-inducing action by immune cells, an immunity activation-inducing action by immune cells, an immunity suppression-inducing action by immune cells, a mastocyte-stimulating action by immune cells, an IgE production-enhancing action by immune cells, an IgE production-suppressing action by immune cells, an IgA production-enhancing action by immune cells, a lymphocyte-proliferating and activating

action by immune cells, an eosinophil production-increasing action by immune cells, a leukocyte migration-promoting action by immune cells, an apoptosis-inducing action by immune cells, an apoptosis-suppressing action by immune cells, a virus resistant-increasing action by immune cells, a cell proliferation-promoting action by immune cells, an angiogenesis inducing action by immune cells, a wound-healing action by immune cells, a hematopoietic cell proliferation-promoting action by immune cells, a progenitor cell differentiating action by immune cells, and a cell differentiation-inhibiting action by immune cells.

[Claim 22]

The method according to any one of claims 18 to 21, wherein a time of the culture is 3 hr to 48 hr.

[Claim 23]

The method according to any one of claims 18 to 22, further comprising determining that the sample has functionality when the production amount of the cytokine in the culture medium obtained by culturing the human immortalized myeloid cells in the presence of the sample is not less than 2 times the production amount of cytokine in a culture medium obtained by culturing the human immortalized myeloid cells in the presence of a negative control.

[Claim 24]

The method according to any one of claims 18 to 23, wherein the sample is a functional beverage.

[Claim 25]

A kit for use in the method according to any one of claims 1 to 24, comprising a human immortalized monocyte or a dendritic cell prepared from the human immortalized monocyte.