CLAIMS

[CLAIM 1] A dental treatment device for removing dental calculus or plaque and disinfecting teeth, comprising:

a vibration unit configured to vibrate by a vibrator configured to generate ultrasonic vibrations;

a chip unit which is connected to the vibration unit and to which the ultrasonic vibrations are transmitted;

a flow channel configured to discharge an antimicrobial agent from the chip unit; and

an optical system configured to irradiate a laser beam for photo-decomposing the antimicrobial agent from the chip unit, the optical system having an optical path separated from the flow channel,

wherein the antimicrobial agent is selected from an antimicrobial agent containing catechins, or a polyphenol solution.

[CLAIM 2] The dental treatment device according to claim 1, further comprising:

a light guide disposed at the chip unit, and configured to guide, as the optical system, the laser beam to a tip end of the chip unit, and

a fiber rod extending from a vicinity of a light source of the optical system to a base end portion of the light guide.

[CLAIM 3] The dental treatment device according to claim 2, wherein

a shaft portion assembled together with the light source is inserted into the vibration unit from a base end side thereof along an axial direction of the vibration unit, and

a hole into which the fiber rod is inserted is positioned at a center of the shaft portion, and the flow channel is positioned about the hole.

[CLAIM 4] The dental treatment device according to ~~any one of~~ claims ~~1 to~~ 3, wherein

the shaft portion is formed not to directly contact an inside of the vibration unit.

[CLAIM 5] The dental treatment device according to any one of claims 2 to 4, wherein

spacer members sandwiching the fiber rod are arranged on a tip end side in the vibration unit.

~~[CLAIM 6] The dental treatment device according to any one of claims 1 to 5, wherein~~

~~the antimicrobial agent is selected from hydrogen peroxide, an antimicrobial agent containing catechins, or a polyphenol solution.~~

~~[CLAIM 7] The dental treatment device according to any one of claims 1 to 6, wherein when the hydrogen peroxide is used as the antimicrobial agent, a wavelength of the laser beam is 405 nm.~~